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A STANDARD OF WEIGHT FOR HEIGHT AND AGE OF AUSTRALIAN WOMEN.[1]

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IN Australia there are many instances in which figures, compiled in places overseas, have been used to express the normal and then serve as diagnostic aids in the assessment of ill health. This is true for standards of weight in the assessment of obesity and underweight. The white Australian population shows a high degree of homogeneity with respect to racial stock, and several generations of Australians have grown up since the first settlers landed in 1788 from the British Isles. Australians enjoy a particularly favourable climatic environment; most of the continent has a high percentage of sunny days *per annum*, ensuring a plentiful supply of vitamin *D*, one of the nutrients essential for good skeletal development. It would seem that stature and physical measurements are important standards to be computed, as characteristics specifically Australian may have emerged, making overseas measurements inapplicable to Australians.

In studying children, chronological age alone is unsatisfactory as a base-line for comparing heights and weights, because children follow individual and, in some cases, very different rates of development; but when adults are studied this variable of rate of growth can be disregarded, as it may be assumed that adults have reached their maximum skeletal development. However, the various types of physique persist in the fully grown human body, so that a measure of variability should be used in association with an average. An additional variable occurs because there are great differences between individuals in their ability to deposit adipose tissue, and the problem arises whether a grossly overweight but otherwise apparently healthy individual should be included in the computation of a standard and, if not, on what limits of weight should a rejection be made.

The assessment of the state of nutrition is probably one of the most important uses for a standard of weight for height and age. Regular weighing of the pregnant woman is part of the routine pre-natal care, and a series of weights taken throughout the gestation period is more meaningful if related to standard weight, height and age charts. A woman may enter her period of pregnancy underweight or obese. For many, particularly young *primigravidæ*, pregnancy means a more regular life, improved health and an absence of slimming measures. A knowledge of weight status at the beginning of pregnancy will assist in the evaluation of any changes which may occur during it. A pronounced increase in weight during the gestation period may be only a compensation for pre-pregnancy underweight or a loss of weight due to excess vomiting soon after conception. Similarly, a knowledge of pre-pregnancy obesity will assist the obstetrician in his care of the pregnant woman.

[1] This paper is abstracted from the thesis leading to the degree of doctor of science granted in 1951 from the School of Public Health, Harvard University, Boston, Massachusetts, United States of America. The research was made possible by grants from the King George V and Queen Mary Maternal and Infant Welfare Foundation, Sydney, Australia, and from the James Foundation through the Department of Maternal and Child Health, Harvard School of Public Health, Boston, Massachusetts.

The inherent biological variability which is encountered whenever attempts are made to measure living organisms complicates even the simple matter of determining the weight range of healthy Australian women of a given age and height. There is a variation in body build; Australian women range from very short to extremely tall, from the small-boned to the heavy-boned, from the delicate of stature to the sturdy of stature. The aim of a standard of weight should be to measure the variability about an average. With such a standard an estimation could be made as to whether an individual woman would fall within the normal range of weight for her height and age. The calculation of a mean weight and its standard deviation for each age and height group would give the required average and measure of variability, if the distribution of the weights is assumed to be at least approximately normal. For clinical use, however, a graphical presentation along the third, fiftieth and ninety-seventh percentiles (which would correspond to approximately the mean and *plus* and *minus* two standard deviations) would allow an individual, by reference to a graph for her age, to be placed in her relative position. If she fell below the third percentile or above the ninety-seventh, then there would be a high probability that she was very underweight or very obese.

The present study was undertaken in order to evolve a standard for clinical nutritional research problems in which women of the child-bearing ages are used as the subjects, and specifically with the view to evaluating increases in weight during pregnancy.

Sampling.

Samples for the standard were drawn from three sources: (i) the medical documents of the Women's Australian Auxiliary Air Force (W.A.A.A.F.); (ii) the medical documents of the Australian Women's Army Service (A.W.A.S.) and the Australian Medical Women's Army Service (A.M.W.A.S.); (iii) summaries from medical records of the Australian Mutual Provident (A.M.P.) Society. It was thought that the women who joined the armed services during the second World War could be used as a sample of the Australian population for the particular age group which they represent. In the majority of cases they would be women of child-bearing age but without children, and there would be a heavier distribution of cases in the earlier age groups, so, until some measure can be devised to estimate the extent of weight changes after the lactation period, the standard for the age groups covered by the service data can be applied with greater accuracy to *primigravidæ* than to *multigravidæ*. The A.M.P. data were derived from an older group, those aged above twenty-five years, and although the A.M.P. summaries gave no indication as to parity of the women, it would be less likely that the subjects would be single women without children than in the case of the services. The subjects from all three sources included were either passed as fit for entry into one of the services or classified as a first-class life for insurance purposes, so they could be considered healthy Australian women. In the use of the service data women born outside Australia were excluded, but the A.M.P. summaries did not supply birthplace data. The percentage of service women born outside Australia was 4·9% for the W.A.A.A.F. and 4·3% for the A.W.A.S., so that the A.M.P. and service figures are limited in their relationship to each other to this extent. The samples from the A.W.A.S. and A.M.W.A.S. were taken for comparison with the W.A.A.A.F. figures, as it was believed that, if the means and standard deviations from these two sources showed reasonable agreement, then they could be taken as representative samples of the Australian population.

Sample Drawn from W.A.A.A.F. Medical Records.

The W.A.A.A.F. medical documents were filed for the whole of Australia in blocks of numbers recruited from the various States. The number of women of child-bearing ages residing in the States of Australia was derived from the Census of the Commonwealth of Australia, June 30, 1947—census bulletins published in respect of each State and issued by the Commonwealth Statistician (see Table I). Records were drawn from the files in proportion to the State populations, every *n*th record being taken according to the figures in the last column of Table I; for example, from a total of 1980 records 800 were required from New South Wales and the Australian Capital Territory; there were altogether 6579 W.A.A.A.F. recruits from this area, so that every eleventh record gave approximately the number required.

TABLE I.

Proportional Sampling According to States.[1]

State.	Women Aged Fifteen Years and Under Fifty Years. Number.	Percentage.	W.A.A.A.F. Enlistments.	Numbers for Proportional Sampling.	Drawing Interval.
New South Wales and Australian Commonwealth Territory ..	770,997	40	6,597	800	1 in 11
Victoria	526,957	27	4,088	540	1 in 11
Queensland	274,093	14	9,235	280	1 in 14
South Australia and Northern Territory	165,442	9	2,332	180	1 in 17
Western Australia ..	124,736	6	3,167	120	1 in 21
Tasmania	63,771	3	832	60	1 in 13
Total	1,925,996	99	26,451	1,980	—

[1] Census, Commonwealth of Australia, June, 1947.

This method of sampling insured that the whole of the file, which covered officers and other ranks, was included when the sample was drawn. Service women who were born outside Australia were found to be in the sample; as the rejection of these from the sample would have reduced the numbers in the sample, the number occurring in each State was replaced by one further drawing from the whole State file, but before the original sample was replaced. This method of sampling gave a total of 98 women born outside Australia and a sample of 1910 Australian-born women (see Table II).

TABLE II.

W.A.A.A.F. Sample: Frequency Distribution According to Birth State and Residence.

State of Birth.	Natives.	Interstate Immigrants.	Total.	Percentage.
New South Wales and Australian Commonwealth Territory	768	33	801	—
Victoria	454	31	485	—
Queensland	210	18	228	—
South Australia and Northern Territory ..	112	14	126	—
Western Australia	172	8	180	—
Tasmania	34	56	90	—
Total Australian ..	1,750	160	1,910[1]	95·1
Born outside Australia	—	—	98	4·9
Grand total ..	—	—	2,008	—

[1] Although a sample of 2,000 was the aim, it was found that in some cases the records were incomplete, so that the number in the sample was reduced.

The place of enlistment and the place of birth were both shown on the medical documents, so that the women could be classified into those who were natives of the State in which they enlisted and those who were interstate immigrants. From the information available it was impossible to make any finer residence classification among the women from various parts of Australia. This amount of geographical separation was advisable because it has been found by other investigators that there is a difference in anthropometric measurements between rural and urban dwellers (Martin, 1949).

Samples Drawn from the A.W.A.S. and A.M.W.A.S. Medical Records.

The samples drawn from the A.W.A.S. and A.M.W.A.S. medical records were taken for comparison with the W.A.A.A.F. figures, as it was thought that if the means and standard deviations from these two sources showed reasonable agreement, then they could be considered as representative samples of the general Australian population of women of child-bearing age. The medical documents of the army are filed according to various States, so that the comparison was made between the New South Wales W.A.A.A.F. and the New South Wales army services. The A.W.A.S. and A.M.W.A.S. are two branches of the army; their documents, together with all other branches of the army service, including males, are filed together in numerical order, officers being included in the file. From the blocks of numbers known to contain only female enlistments it was decided to draw every fifth record from the New South Wales army records. This gave a total of 1555 cases, which were sorted into two samples of 774 and 781 by taking every alternate case.[1] The women born outside the Commonwealth were then sorted out, the result being two samples of Australian-born women of 742 and 746, with 32 (or 4·1%) and 35 (or 4·5%) from outside Australia (see Table III).

TABLE III.

A.W.A.S. and A.M.W.A.S. Samples: Frequency Distribution According to Birth State and Residence.

Sample.	Natives.	Interstate Immigrants.	Total.	Percentage.
Sample I:				
New South Wales ..	719	23	742 } 774[1]	95·9
Born outside Australia	—	—	32 }	4·1
Sample II:				
New South Wales ..	771	35	746 } 781[1]	95·5
Born outside Australia	—	—	35 }	4·5

[1] Incomplete records accounting for difference in size of sample.

Samples Drawn from A.M.P. Society Summaries of Medical Records.

Only height, weight and age appeared on the company's summaries, and the measurements were taken with the subjects fully dressed, shoes included. Thus the heights will be complicated by the variety of heel heights. The age groupings were already made on the summaries. The total number in the A.M.P. sample was 1707

Social Status.

Mann (1926) in England and Machin (1939) in New South Wales found that children from families of a high economic level were taller and heavier than children who belonged to poorer families. The only indication of social and economic status that could be gleaned from the data used in the present study was the statement of occupation appearing on the service documents; but no information of this sort was found in the insurance company summaries. Table IV sets out the various classes of occupation found on the medical records in the two services.

The statement of occupation given by the service women when they enlisted was in some cases governed by the type of employment the recruit wished to follow, or avoid, whilst in the service. Also several occupations may have been followed prior to enlistment, but only one was cited on the document. When one is trying to assess social status by studying occupation categories, the analysis is confused by the widely used classification of "domestic duties", which can represent two groups—those women who work in their own homes and those who are employed as domestic workers. From the data on the service documents, no distinction can be made between these two groups. The basic limitations which are present in the source data prevent any further conclusion from being drawn with respect to occupations and social and economic status; but it can be seen by inspection of Table IV that the occupations are similar to those one would expect public hospital clinic patients to have followed before marriage.

[1] Incomplete records accounted for differences in size of sample.

TABLE IV.

Worker or Occupation.	Number.	Percentage of Total.
Clerical, cashier, postal employee	1,023	30·02
Domestic duties in own home, domestic employee, station help, cook-general but not cook	905	26·56
Factory worker, machinist, printer, hosiery repairer, egg handler	358	10·50
Saleswoman or shop assistant, corset maker ..	340	9·98
Dressmaker, tailoress, milliner	121	3·56
Waitress, café worker, milk bar worker, cafeteria or canteen worker, barmaid	114	3·35
Trained nurse,[1] nurse not trained, dental nurse ..	82	2·41
Heavy domestic duties in institutions, hospitals, hotels *et cetera*, office cleaner, housemaid, cook, laundress, stewardess	66	1·94
Telephonist	63	1·85
Hairdresser, manicurist	36	1·06
Teacher, governess	18	0·53
Artist, designer, retoucher, commercial artist, floral artist, window dresser	16	0·47
Supervisor, department head, manageress, submatron, forewoman, buyer	15	0·38
Student	13	0·38
Driver, bread carter, omnibus driver, tram conductress, assistant engineer	11	0·32
Laboratory assistant	11	0·32
Farmhand, land army worker, dairy assistant, dairymaid	11	0·32
"Usherette"	8	0·26
Librarian	7	0·21
Draughtswoman, tracer	6	0·18
Photographic assistant	4	0·12
Dancing teacher, music teacher	4	0·12
Drill instructor, masseuse, occupational therapist	4	0·12
Radio announcer, journalist	3	0·09
Receptionist	1	0·03
Showroom display	1	0·03
Messenger	1	0·03
Social service	1	0·03
Unspecified	165	4·85
Total	3,408	100·02

[1] Only one trained nurse in the sample.

Heights.

The mean height and its standard deviation were computed for each of the samples from the air force, the army and insurance company. Only Australian-born women were used in the two service samples. In the case of the W.A.A.A.F. data, a computation was made for each of the States of Australia. The results appear in Table V.

With respect to the mean height of women from the various States, the difference between the tallest and the shortest is 0·4 inch. This seems insignificant when the difference referred to relates to a girl's height of five feet three inches. The interpretation of this small difference becomes of interest to those studying factors affecting bone development. This interpretation of the difference in height between Queenslanders and Victorians, and Western Australians and Victorians, would probably be found in environmental factors rather than in differences in racial stock, since the Australian population, as was pointed out above, is remarkably homogeneous in the latter respect. Skeletal development is, among other factors, dependent upon adequate supplies of vitamin *D*, which is derived from the action of the ultra-violet rays of sunlight on the skin, so the States situated nearer the tropics would have a better source for vitamin *D* production than those to the south of the continent. The warmer climates allow longer periods in which the skin is exposed to the direct rays of the sun unhampered by winter clothing. It has been found by a group of French workers (1921) that the sun must rise above an angle of 35° in order that the ultra-violet rays can be effective in converting the skin sterols into vitamin *D*. The number of hours per year during which this does not occur is greater in Victoria

TABLE V.

Heights of Australian Women, Ages Seventeen to Forty-eight Years.

State.	W.A.A.A.F.			A.W.A.S. and A.M.W.A.S.			A.M.P.		
	Number.	Mean. (Inches.)	Standard Deviation. (Inches.)	Number.	Mean. (Inches.)	Standard Deviation. (Inches.)	Number.	Mean. (Inches.)	Standard Deviation. (Inches.)
Queensland[1]	209	63·6	2·2	—	—	—	—	—	—
Western Australia[1]	171	63·6	2·1	—	—	—	—	—	—
New South Wales	768	63·4	2·3	715	63·4	2·3	1,070	64·4[2]	2·3
	—	—	—	709	63·3	2·2	—	—	—
South Australia	112	63·4	2·3	—	—	—	—	—	—
Victoria[1]	454	63·2	2·2	—	—	—	—	—	—
Tasmania	34	63·2	2·6	—	—	—	—	—	—

[1] The differences between the means of Victoria and Queensland and Victoria and Western Australia are significant at the 5% level.

[2] Measured in shoes.

than in the northern States. Thus geographical position probably contributes to the differences in height between the northern States and Victoria. The differences in height between Tasmanians on the one hand and Queenslanders and Western Australians on the other, although similar in magnitude to the differences between the last-mentioned two States and Victoria, cannot be shown to be significant. The differences in the size of the samples may Although, as was stated above, the sampling from the W.A.A.A.F. files was done according to proportion of women of child-bearing age residing in the various States, the proportion of interstate immigrants in the sample drawn from the Tasmanian enlistments was much higher than in the other States. Of the total of 90 Australian-born women account for this, as the sampling error is much larger when the number of cases in the sample is smaller. who enlisted in Tasmania, only 34, or less than 50%, were born in that State. Table VI shows some climatological and population data taken from the "Official Year Book of the Commonwealth of Australia" (1944-1945). Although there is no way of knowing whether the women enlisted in the same proportion of rural to urban distribution as shown in Table VI, the population distribution does not appear contrary to the interpretation discussed above. Other studies (Martin, 1949) have shown differences between rural and urban dwellers in anthropometric measurements, the rural people being taller than the city folk. The environmental factor involved is probably the same as the one discussed in relation to geographic position, since rural people are more likely to follow outdoor types of occupations and recreations, and a certain filtering of the sun's rays by smoke and fumes takes place in large cities.

As was noted in Table V, the A.M.P. measurements were taken with the subjects wearing shoes; therefore the only means of comparing them with the service group is to deduct an arbitrary figure from the heights to allow for shoes. Since the difference between the mean of the A.M.P. and the mean of the service data is one inch, a deduction of one inch is made when heights are plotted in the weight graphs.

TABLE VIA.

Climatology of Australian Capital Cities.[1]

City.	State.	Latitude.	Mean Hours of Sunshine: Total for Year (up to and including 1942).
Brisbane.	Queensland.	27°·28′ S.	2710·7
Perth.	Western Australia.	31°·57′ S.	2833·0
Sydney.	New South Wales.	33°·52′ S.	2470·1
Adelaide.	South Australia.	34°·56′ S.	2532·3
Melbourne.	Victoria.	37°·49′ S.	2046·8
Hobart.	Tasmania.	42°·53′ S.	2145·0

[1] "Official Year Book of the Commonwealth of Australia" (1944-1945), Commonwealth Bureau of Census and Statistics, Canberra, Australia, number 36.

Weight.

The purpose of this study was to evolve graphs (Figures I to IV) which could be used to assess the weight status of subjects in relation to an expected mean and the normal variability about it. Height and age both affect weight. The logical procedure is therefore to develop for each of a series of age groups a graph of weight against height, not as a single line, but as a band within which 95% of normal individuals would be expected to lie—that is, the mean *plus* and *minus* two standard deviations.

TABLE VIB.

Population Distribution of Australian States.

State.	Density. (Persons per Square Mile.)	Percentage of Total Female Population Residing in Rural Areas.
Victoria	22·82	34·53
Tasmania	9·41	48·23[1]
New South Wales	9·32	30·50
South Australia ..	1·65	36·97
Queensland ..	1·60	46·92
Western Australia	0·50	41·79
Australian	2·47	—

[1] The metropolitan division of each State included the capital city, and the adjoining urban provincial districts in all States, except Tasmania, were taken for census purposes as being those cities and towns which are not adjacent to the metropolitan area and which are incorporated for local government purposes. The rural area comprises the remainder of the State, whether incorporated or not incorporated. In Tasmania, the classification of urban and rural populations was made by the census staff.

The service data were first broken down into groups progressing by one year of age and one inch of height. One age group (nineteenth year) gave sufficient numbers for each height to permit an examination of the weight variances within each height class. These variances were homogeneous, so a pooled standard deviation for weight within each height class was calculated for the women in their nineteenth year. The test for homogeneity of variance was that suggested by Bartlett (1937).

For other ages numbers were smaller and some grouping of years was necessary to give reliable results. The A.M.P. figures were grouped as twenty-fifth to twenty-ninth year, thirtieth to thirty-ninth year and fortieth to forty-fifth year. Examination of the means and frequency distributions of weights within height classes for the years twenty to twenty-four, twenty-five to twenty-nine, and thirty to thirty-nine years in the service data showed no major differences between individual years within each range, so these groupings were adopted. Variances of weights within height classes proved to be homogeneous for each set of grouped ages, and a pooled figure was obtained for each set.

The data were next considered for possible rejections. The medical examiners in some cases recorded comments on physique, and cases were included in the samples with

notations of "grossly overweight" or "very obese". Individuals showing these excesses were few, and their inclusion would have no appreciable influence on the mean. However, they would increase the estimate of variability, and this is of importance in assessing an individual's weight status. In the absence of an outside standard a criterion of rejection for excluding these extremes was taken as two standard deviations on each side of the mean, the unweighted one that fitting directly to the points was adopted.

The line of mean weight against height was then fitted for each age or group of ages, and the first and second standard deviation was marked for each point. If an individual falls outside the second standard deviation, she could with confidence be classified as either very underweight or very obese; if she fell within these limits, in

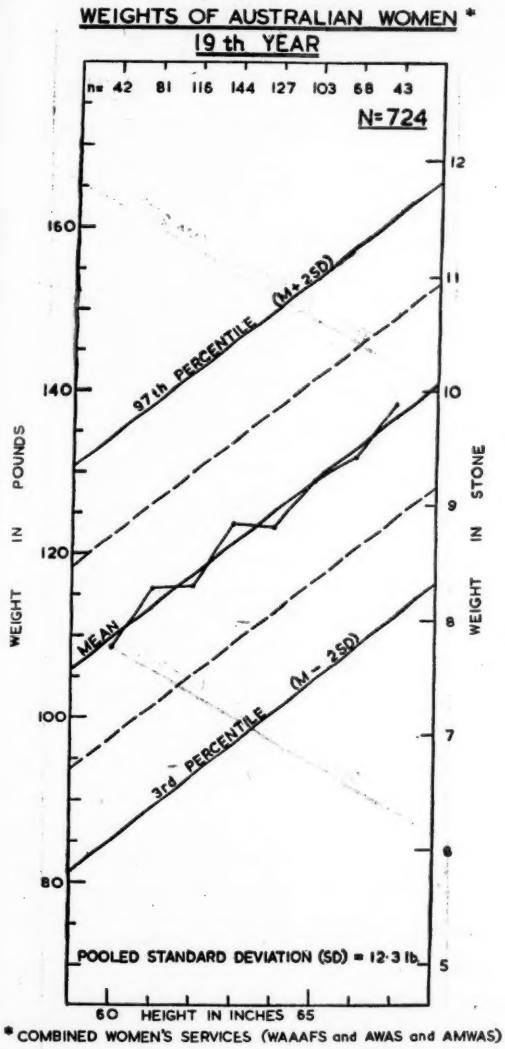
WEIGHTS OF AUSTRALIAN WOMEN *
19th YEAR
n= 42 81 116 144 127 103 68 43
N=724
97th PERCENTILE (M+2SD)
MEAN
3rd PERCENTILE (M-2SD)
POOLED STANDARD DEVIATION (SD) = 12·3 lb.
WEIGHT IN POUNDS
WEIGHT IN STONE
HEIGHT IN INCHES
* COMBINED WOMEN'S SERVICES (WAAAFS and AWAS and AMWAS)

FIGURE I.

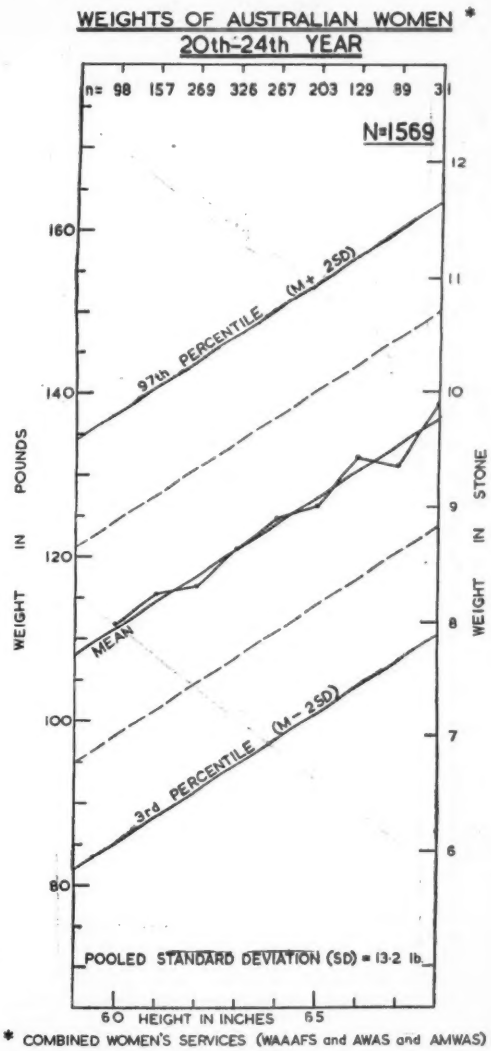
WEIGHTS OF AUSTRALIAN WOMEN *
20th-24th YEAR
n= 98 157 269 326 267 203 129 89 31
N=1569
97th PERCENTILE (M+2SD)
MEAN
3rd PERCENTILE (M-2SD)
POOLED STANDARD DEVIATION (SD) = 13·2 lb.
WEIGHT IN POUNDS
WEIGHT IN STONE
HEIGHT IN INCHES
* COMBINED WOMEN'S SERVICES (WAAAFS and AWAS and AMWAS)

FIGURE II.

standard deviation being taken from the pooled variance already calculated. More "overweight" than "underweight" subjects were rejected, and the reduced variances were still homogeneous for each set of grouped ages. Use of the reduced variance as an estimate of the population variance is considered justified, as isolation of the outstanding cases is the object of the standard and the reduced figure is more sensitive for demonstrating them.

The nineteenth year group was next used as a test group for finding the best method of fitting a smoothed line to the mean weights. A line was first fitted weighting each mean inversely as its variance; this line was so close to the absence of any Australian standard for classification of body types, she would have to be assessed by clinical estimation of her stature type in association with the amount of adipose tissue.

Summary and Conclusions.

1. The statistical analysis of height and weight according to age and height of random samples from the medical documents of the women's services of the Australian army and air force was made. To supply data for women of higher age groups, summaries from the Australian Mutual Provident Society were included in the study. A total of 5270 cases were studied.

2. Of the 2008 W.A.A.A.F. subjects, 4·9% were found to be foreign born.

3. The types of occupations were summarized in order to give an indication of social and economic status of individuals in the sample.

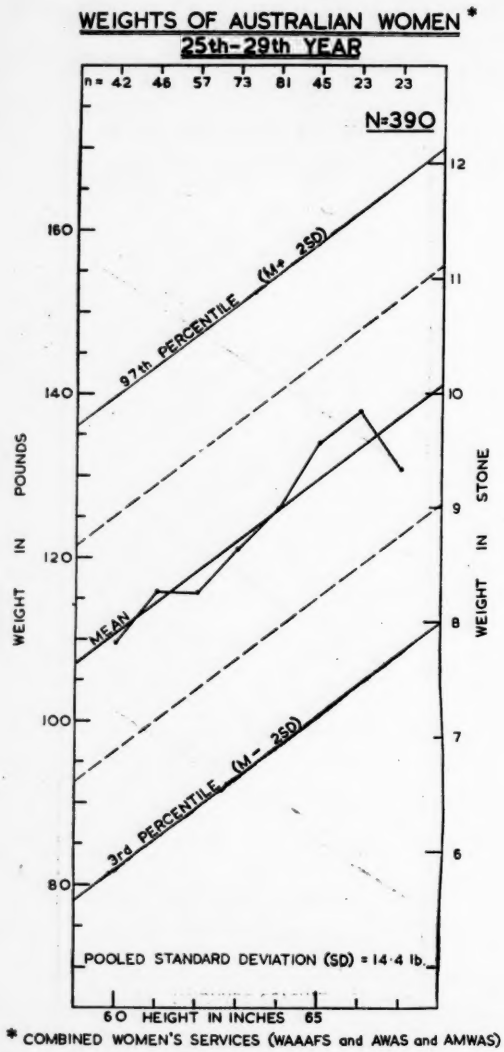

FIGURE III.

4. From this study, the mean height of Australian women was found to be 63·5 inches, with a standard deviation of 2·2 inches. There was found to be a State difference in height which parallels the amount of sunshine enjoyed by the inhabitants; the more northerly States of Western Australia and Queensland were found to provide service recruits whose mean heights were statistically significantly higher than those of the recruits from Victoria. The same difference occurred between Tasmanians and the residents of the northern States; but owing to the smallness of the Tasmanian sample compared with that of other States, the difference could not be shown to be significant.

5. Weight graphs have been constructed for age and height, and the method of rejection of the very obese or very underweight is described.

Further work on standards of physique should be done in Australia while the population is still homogeneous and before the effect of the large-scale immigration is reflected in the racial stock, for at the present stage information may be forthcoming which could be used in comparison with

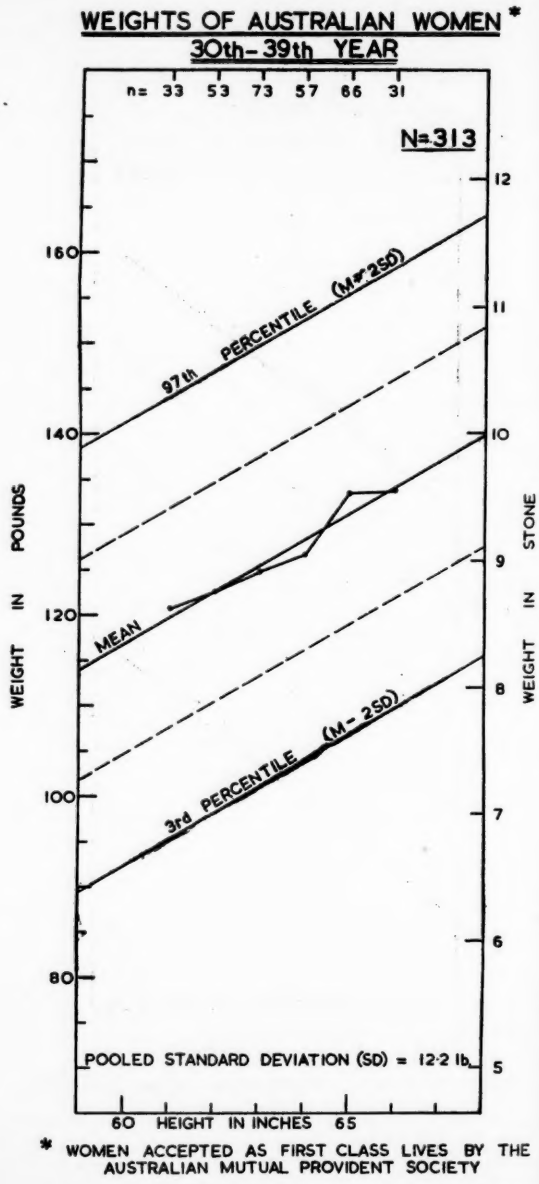

FIGURE IV.

English data to give information on the effect of environment on physical characteristics. The standard worked out in this paper should be regarded as a pilot study and used to provide a basis for comparison. Another study should be undertaken to make the standard more precise by developing criteria for the classification of body build into the large, medium and small framed types. Such a classification would be of great assistance in assessing the degree of obesity or underweight, and would make an

important contribution to the anthropometric knowledge of Australian women.

Acknowledgements.

It is a pleasure to acknowledge my indebtedness to the following: Miss Helen Turner, statistician, Council for Scientific and Industrial Research Organization, for consultation and assistance in planning and computing the standard; the Director-General of Medical Services, Royal Australian Air Force, for his cooperation and his permission to publish the data obtained from the Women's Australian Auxiliary Air Force medical documents; the Chairman of the Repatriation Commission for having made certain records available in connexion with my research and for permission to publish results; and the Australian Mutual Provident Society for the data derived from its medical records.

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THE FUNCTION OF A CHEST CLINIC.

By ALAN KING,
Perth.

THE impetus given to tuberculosis case finding as a result of the mass radiography findings in recruits and servicemen during World War II has resulted in considerable post-war development in chest services.

The broadening of the field of thoracic surgery in general, and in particular in relation to pulmonary tuberculosis as a result of the use of streptomycin and para-aminosalicylic acid, is too well known to need elaboration.

The modern pattern of tuberculosis control as evolved by Herman E. Hilleboe in 1946 is now emerging in full-dress form; and the increased activities of case finding in many countries have produced the by-product of numerous abnormalities other than tuberculosis, and have quickened the interest of physicians in diseases of the chest.

Wunderly (1948) summed up the problem of the control of pulmonary tuberculosis in Australia at the Australasian Medical Congress (British Medical Association) in August, 1948.

Fortunately for Australia, the Commonwealth Government, which had shown itself to be in the van of post-war developments with its *Tuberculosis Acts* in 1945 and 1946, put its approval on an "all-out" campaign to eradicate tuberculosis on November 25, 1948, with *The Act to Provide for Medical Services in Respect of Tuberculosis* "to assist the States in the development of services and facilities for the diagnosis, treatment and control of tuberculosis".

B. A. Dormer (1952), in his recent review, has made an important analysis of the chest services in England and Wales. The chest physician, as designated under the *National Health Act*, covers the "wide spectrum of pulmonary disease, including pulmonary tuberculosis".

Evidently there have been some difficulties in grafting the new services onto the old. Dormer is of the opinion that "when the chest physician is officially on the staff of the hospitals in his area and proves his quality, these difficulties will disappear". "A chest physician without beds is a tuberculosis officer of the old school under another name and will achieve nothing."

One of the more satisfactory solutions appears to have been the development of chest clinics, which has been paralleled to some extent in this country.

One should say here that the new term "chest clinic" is the more appropriate; people will attend the mass radiographic unit at a chest clinic as volunteers without any hesitation.

The function of the Perth Chest Clinic has become fairly well defined in the few years since its opening in May, 1948.

It is realized, of course, how fortunate we are in Western Australia that the relatively small population of 590,000 for the State and 317,000 for the metropolitan area has allowed the effort to be directed from one centre.

The large number of persons examined results in the clinic physician encountering all types of chest disease, for which he must act as the "casualty clearing medical officer", while retaining under his control for further investigation patients with suspected tuberculosis and patients for whom the differential diagnosis includes tuberculosis as a strong possibility.

It might be asked what advantages a chest clinic may have as compared with the out-patient clinic managed in the general hospital. With experience of both, and having "graduated" from the one to the other, I have no hesitation in stating that there is no comparison.

True, we regard the Perth Chest Clinic as an out-patient department of the Royal Perth Hospital and deem that its efficiency to a large degree depends on its proximity to the hospital; the micro-films of the hospital in-patients and out-patients are read daily at the clinic in conjunction with the hospital superintendent; the clinic physicians have available beds in the hospital and are able to arrange admission of suspected tuberculosis patients for investigation.

However, the machinery that must be put in operation immediately a patient is diagnosed as suffering from tuberculosis is too complicated to be arranged from a hospital out-patient department if there is not to be delay. This includes notification, the assessment of eligibility for the tuberculosis allowance, the listing and immediate follow-up of contacts, the B.C.G. vaccination of "negative" Mantoux reactors amongst contacts, and the home visits of the clinic nurses and almoner.

The two papers elsewhere in this journal, by Rowland Anderson and by Frank Heymanson, show two aspects of the attempt to coordinate effort from the clinic.

Function of the Clinic.

The function of the Perth Chest Clinic may be described briefly as follows.

Administration.

The basis of success of tuberculosis control is the possession of an up-to-date case register of notified cases of pulmonary tuberculosis. The implementation of compulsive legislation is an essential for successful administration—for example, in control of recalcitrant patients, the declaration of individuals and classes for compulsory X-ray examination of the chest.

Prevention of Disease.

Close supervision of all patients living at home is maintained by a staff of visiting nurses. The family unit is advised in matters of hygiene.

No potentially infectious patient with a "positive" sputum is discharged from hospital unless the home conditions have been first approved. Liaison is effected with the State Housing Commission to improve living conditions when the existing environment is considered unsuitable for tuberculosis sufferers.

The increasing breadth of the B.C.G. vaccination programme to include the school leaving age group and National Service trainees is aimed at lessening the incidence of tuberculosis. The efficacy of the latter activity will, it is hoped, be determined by the central follow-up records kept at the clinic.

Case Finding.

The activities of the clinic are directed to the location of the largest number of persons suffering from pulmonary tuberculosis with the maximum economy of effort—that is, within the bounds of availability of equipment and medical personnel.

As mentioned in Dr. Heymanson's article, by far the most important group is that of the patients with suspect chest symptoms referred to the clinic by general practitioners. The consistent figure of over 2% of active tuberculosis in this group has been confirmed by other observers (Trenchard and Grenville-Mathers, 1952).

It is also suggested that the second most important group in which to discover pulmonary tuberculosis is that comprising hospital in-patients and out-patients. This is clearly indicated by Dr. Anderson's valuable contribution. His results are also paralleled elsewhere (Jacobs, 1951).

It is contended that the close liaison between the general hospital and the chest clinic is very important. This allows of the immediate follow-up of all patients suspected of having tuberculosis, with the minimum loss of time.

Other groups in which the incidence of pulmonary tuberculosis is expected to be higher than that of the general population should naturally be searched next. Here we include particularly contacts of known sufferers from pulmonary tuberculosis, among whom the incidence is often reported as being four to five times higher than in the normal population (Puffer *et alii*, 1952; Dick and Thompson, 1946; Director of Tuberculosis Control, Western Australia, 1951). For the purpose of checking contacts it is essential that an efficient, up-to-date contact register be kept and that they be circularized every six months to report for X-ray examination.

Apart from these, special groups who are directed for mass radiography include ante-natal patients referred from midwifery hospitals and obstetricians. Migrants (all types) are not neglected as a special group, and in this State are now regarded as a class for compulsory X-ray examination. Past experience has shown that these include a high percentage of active tuberculosis sufferers (Director of Tuberculosis Control, Western Australia, 1949, 1950).

Medical Care.

The chest clinic is the centre for out-patient investigation and supervision of known tuberculosis subjects discharged from hospital and sanatorium. The clinic physician must be expert in the management of patients with artificial pneumothorax.

We prefer the clinic medical officer to have had considerable experience in a sanatorium, and regard this training as a necessary background to the reading of 35-millimetre films from the mass radiography unit.

He must be particularly aware of the significance of suspected pulmonary carcinoma. The speed at which such patients can be admitted to hospital for bronchoscopy and thoracotomy is of paramount importance in the prognosis of this disease (Clark, 1952).

The horizon of the clinic medical officer is not limited to the clinic, for his reading of miniature and 17-inch by 14-inch films and follow-up of patients may be extended to other hospitals, both in the metropolitan and in the country areas; for example, micro-film X-ray units are installed in the Fremantle Hospital and the Saint John of God Hospital, Subiaco, and many chest films are also received from country practitioners and hospitals all over the State.

The fact that clinic physicians have access to beds in the Royal Perth and Fremantle Hospitals, and also follow up their patients in the Woorooloo Sanatorium, is essential to the keenness of their work.

It may be mentioned here that the economics of chest surgery entail the payment of the chest surgeons as members of the staff of the tuberculosis services.

Social and Economic Protection.

The payment of the tuberculosis allowance has made it economically possible for any sufferer to accept treatment and has ensured the successful development of the tuberculosis control programme. If the individual patient, who has just been told by the clinic doctor that he or she has tuberculosis, can be immediately referred to the pension clerk in the same building and the full position in regard to his or her financial protection explained, this does a lot in starting the patient off in the right frame of mind for acceptance of treatment.

Rehabilitation.

As an aspect of tuberculosis control rehabilitation may be regarded as the proof of the efficiency of the above-mentioned activities. Liaison with the Tuberculosis Association and the Commonwealth Department of Social Services allows completion of the plans made in the hospital for return of the patient to part-time employment in a sheltered workshop or to suitable work.

Conclusion.

The Perth Chest Clinic retains the function of the old Tuberculosis Bureau, but has become invigorated by its increased responsibilities, and the clinic physicians must be able to play their part in the diagnosis and suggested management of the non-tuberculous chest diseases.

The type of clinic evolved in Perth, with the provision of an easily accessible consultant service to the general practitioner, free of charge, has proved acceptable to the profession.

Acknowledgement.

My thanks are due to the Commissioner of Public Health, Dr. Linley Henzell, for permission to publish this article.

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TUBERCULOSIS CASE FINDING IN PERTH.

By F. E. HEYMANSON,
Perth.

IN May, 1944, an article by Toussaint and Pritchard was published, describing the results obtained during a twelve-month period when general practitioners in the boroughs of Bermondsey and Southwark, England, were invited to send for chest X-ray examination anyone suspected of having pulmonary tuberculosis. During the year 1943, 2473 patients had an X-ray examination and 80 cases of active tuberculosis were discovered, representing an incidence of 3·23%.

The high percentage of disease found as a result of the mutual cooperation of general practitioners and those primarily interested in tuberculosis case finding was responsible for the direction of the activities of the Perth Chest Clinic right from its inauguration in May, 1948, to the establishment of a close and continuing liaison with the general practitioners in this State. It was hoped that this would lead to results on a scale commensurate with that in the English report.

Toussaint and Pritchard's plan of cooperation was based on certain theories held by the authors concerning the development of pulmonary tuberculosis and the accompanying symptomatology, and doctors were asked to send in only those patients who came within a fairly wide but clearly defined domain. It was held that pulmonary tuberculosis at its inception consisted of a localized pneumonic involvement, which could spread rapidly, but which might be arrested at any stage of its development and revert to what may be called the "tubercular" type of disease. Later a rapid spread could occur from the preexisting tubercular lesion.

The clinical picture during an acute episode was stated to resemble a respiratory infection of the common type, either pneumonic or influenzal, the respiratory symptoms in certain instances being preceded by symptoms arising in the alimentary tract. At other times general malaise and fever were the main complaints.

In accord with this hypothesis a list of the common respiratory symptoms was drawn up, including also hæmoptysis, ischio-rectal abscess, loss of weight and debility; and local doctors were invited to send in all their patients who came within the scope of this list.

I have little quarrel with this conception of the common sequence of events seen in the development of the tuberculous process in the human lung, except to emphasize that the "tubercular" lesion is capable of slow, indolent progress over prolonged periods, acute episodes being relatively uncommon and of trifling degree.

As mentioned above, it was the contention of the English workers that a patient in the acute phase of the development of a tuberculous lesion often presented a clinical picture indistinguishable from that of ordinary pneumonia or influenza, but that in cases of tuberculosis recovery was delayed and incomplete; however, it is the impression in Western Australia that the relatively massive acute tuberculous spread which can mimic the common pneumonic infections, although encountered not infrequently, is not so common as was found in their experience. In spite of this, it cannot be too strongly emphasized that acute pulmonary infections which fail to resolve within a reasonable time must be suspected of being tuberculous. This is particularly true if the patient has been treated with sulphonamides and/or antibiotics (other than streptomycin), the administration of which can be regarded within limits as constituting a therapeutic test for tuberculosis.

Experience in this State has shown that the symptoms more commonly associated with tuberculous disease are the traditional ones—loss of energy, loss of weight, sometimes cough and production of sputum, and occasionally hæmoptysis. The first-mentioned of these is the commonest and often occurs with disease of minimal extent. Everyone nowadays is familiar with the so-called asymptomatic case; however, many of the patients concerned, when closely questioned, will admit to one or more of the above-mentioned symptoms.

Plan of Cooperation in Western Australia.

Since May, 1948, local practitioners have been asked to send in to the Perth Chest Clinic all patients for whom they thought an X-ray examination of the chest was desirable for any reason whatsoever; but the advice was offered that unexplained loss of weight and energy, with or without cough and sputum production, was always worth following up. At the same time attention was drawn to the manner in which the sexes differ as regards the age groups in which is found the maximum incidence of disease; that is, men have an increased morbidity between thirty-five and fifty-five years, women between twenty and thirty-five years.

The system followed is that patients attend with a doctor's letter and are submitted to X-ray examination; they are not examined by the medical staff unless by arrangement. If a routine X-ray examination is all that is asked for, a 35-millimetre film is used; if any significant symptoms are recorded, a full-size film is taken. A report is sent within a few days. In those instances in which the provisional diagnosis of tuberculosis is virtually certain and the disease is of sufficient extent, admission to hospital is advised without preliminary bacteriological investigation. If, as is more commonly the case, out-patient bacteriological investigation is thought desirable, this is generally carried out at the clinic by arrangement with the doctor concerned. This appears to be preferred by most practitioners, and it is accepted as part of the clinic's routine responsibilities.

Results.

From May, 1948, to December 31, 1951, 16,150 people underwent X-ray examination, and 450 were found to be suffering from active pulmonary tuberculosis. The figures for each year are set out in Table I.

TABLE I.

Year.	Persons Referred for X-Ray Examination.	Cases of Bacteriologically Proven Tuberculosis.	Percentage.
1948	1965	102	5·0
1949	3947	98	2·7
1950	3699	122	3·3
1951	6539	128	2·0

The incidence for 1948 was swollen by the inclusion of a number of previously notified cases. An approximation to the percentage of new cases for that year is a little over 3%.

Comment.

These results are comparable with those of Toussaint and Pritchard and clearly demonstrate the supreme importance of the part played by the general practitioner in the field of tuberculosis case finding.

By comparison, there is no other group within the community which will yield such a high proportion of tuberculosis as those referred from the consulting room.

Contacts of known tuberculosis sufferers followed up and submitted to X-ray examination during 1950 and 1951 totalled 3908, and 31 cases of active tuberculosis were found, representing an incidence of 0·79%, as against an average rate of 2·45% found amongst private patients during the years 1949 to 1951.

The mass radiography programme, since its inception in this State, has shown an average incidence of disease amongst those examined radiologically of approximately 0·25%, or one-tenth of that for private patients referred to the clinic.

The results show that during the last twelve months there has been a great increase in the number of private patients referred for X-ray examination and, at the same time, a drop in the percentage with active disease. It was at first thought that this drop in percentage might be a reflection of the progress of the tuberculosis control campaign; however, the results of mass radiography of volunteers attending the clinic over the same period show no alteration in the incidence of disease.

There is no doubt, therefore, that the reduction in the proportionate number of cases is due to the private practitioner's casting his net more widely and relaxing his criterion for an X-ray examination of the chest. This explanation is supported by the fact that the percentage of non-tuberculous abnormalities is also lower.

The figures for the last two years are shown in Table II.

This diminishing return of tuberculosis discovered with increased facilities for X-ray examination has also been

TABLE II.

Year.	Persons Submitted to Examination.	Non-Tuberculous Abnormalities.	Percentage.
1950	3699	604	16·0
1951	6539	643	9·8

the experience of others (Trenchard and Grenville-Mathers, 1952).

The question may be asked whether most of these 450 cases of proven pulmonary tuberculosis discovered during the last three and a half years (less some of those in 1948) might not have been discovered in any event by clinical examination and sputum investigations carried out by the private practitioner, together with the help provided by X-ray examinations made in private practice and at the public hospital.

Experience supports the belief that only a few of the 16,150 patients reported on in this paper would have undergone X-ray examination in the absence of the present scheme.

Clinical examination of the chest in cases of minimal or moderate disease often detects no abnormality; even in cases of fairly extensive disease the clinical findings are often grossly at variance with the X-ray picture, and this occurs in our experience sometimes even with colleagues of known and outstanding professional competence.

Bacteriological investigation of patients nowadays frequently, in minimal cases almost always, requires examination of the gastric contents, including culture and guinea-pig inoculation. It has been found necessary to take specimens on three consecutive days, if active cases are not to be missed.

These considerations uphold the contention that, without X-ray facilities with easy access and prompt results such as are provided by this clinic, many if not most of the cases discovered would have been missed or would have been diagnosed much later and at a correspondingly more advanced stage of disease. It goes without saying that, were it not for the enthusiasm shown by the general practitioner himself, the mere provision of these facilities would have been an empty gesture.

Conclusion.

The general practitioner is the front-line soldier in the war against tuberculosis, as indeed he is in virtually all other diseases. Although there are in use other techniques of tuberculosis case finding, general practitioners as a body constitute the trained task force upon whom falls the responsibility of breaching the enemy's defences.

This paper has attempted to show what can be accomplished when freely available X-ray facilities are brought up to reinforce the attack. That this service has been of great assistance to the general practitioner in this State he has himself testified by his increasing use of it. In so doing, he is making a major contribution towards the control of tuberculosis, and thus helping to bring nearer that glittering yet unfortunately still distant goal—the total eradication of the "white plague".

Summary.

1. Since its inauguration in May, 1948, the Perth Chest Clinic has maintained a close liaison with the general practitioner and encouraged him to use the available facilities for chest X-ray examination of his patients.

2. Up till December 31, 1951, 16,150 patients referred from private practitioners have undergone X-ray examination, and 450 bacteriologically proven cases of tuberculosis have been discovered.

3. These figures demonstrate that there is no other case-finding technique which can produce comparable results with a similar economy of effort.

Acknowledgement.

My thanks are due to Dr. Alan King, who suggested this article, for his encouragement and friendly criticism during the writing of it.

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REPORT ON PULMONARY TUBERCULOSIS IN A GENERAL HOSPITAL.

By ROWLAND ANDERSON,
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MANY reports have now been made concerning the incidence of unsuspected tuberculosis in general hospitals. Our attention was primarily drawn to this subject in 1946 by reading a paper by Herman E. Hilleboe (1945): "Tuberculosis is a General Problem and General Hospitals Must Help to Solve It".

At that time we were concerned about the incidence of pulmonary tuberculosis amongst the trainee nursing staff of the Royal Perth Hospital. Nurses who had had normal chest X-ray films at the commencement of their training developed lesions at some stage during their course, a finding which indicated that the undiagnosed, infectious tuberculous patient was the source of their infection.

The results are reported here of investigations carried out by the Royal Perth Hospital. A review of similar work in the United States of America—"Tuberculosis Case Finding in General Hospitals"—was made by Zella Bryant in 1950.

More recently Siegal, Plunkett and Hilleboe (1951) have reported results of a programme of routine X-ray examination of patients on admission in 41 hospitals in New York State in 1947–1949 (with somewhat similar findings to our own results).

In-Patients.

Routine chest X-ray examination of in-patients was commenced in 1947 on four inch by five inch film.[1]

Those patients who had not already had a chest X-ray examination were examined as soon as possible after admission to hospital. During the initial stages large films were used for

[1] Now on 35 millimetre film.

TABLE I.

Pulmonary Tuberculosis—In-Patients.

Yearly Period.	Number of Admissions.	Minimal Lesion.			Moderately Advanced Lesion.			Far Advanced Lesion.			Total.	Number of all Types of Tuberculous Patients per 1000.	Number of Patients with Active and Infectious Tuberculosis per 1000.
		Proven Active.	Probably Active.	Probably Inactive.	Proven Active.	Probably Active.	Probably Inactive.	Proven Active.	Probably Active.	Probably Inactive.			
July, 1947, to June, 1948	7656	—	—	—	—	—	—	—	—	—	—	—	6·4
July, 1949, to June, 1950	8012	6	9	11	21	3	10	26	1	5	92	11·5	6·6
July 1, 1950, to June 30, 1951	9082	6	2	9	25	8	14	31	1	—	96	10·6	6·8

patients who could not be moved, the pictures being taken by portable apparatus. This practice was soon discontinued. No person was retained in hospital until an X-ray picture could be taken if, for some reason, it was not possible to have it taken before discharge from hospital. It has been estimated, however, that this survey covered 90% of all public patients admitted.

The figures given exclude all patients admitted to intermediate wards, neurosurgical and thoracic units, and tuberculosis beds. All patients found to be suffering from active pulmonary tuberculosis were immediately transferred to tuberculosis beds.

During the year 1947–1948, records of infectious patients only were filed. No records of the year 1948–1949 were retained, but by that time the regular follow-up of patients had been instituted.

Of the 17,094 patients admitted to hospital between July 1, 1949, and June 30, 1951, a proportion of six to seven per thousand was found to be suffering from active and infectious pulmonary tuberculosis (Table I).

The majority of those with either moderately or far advanced infection had experienced no symptoms, or none of sufficient consequence to cause the seeking of medical advice until just prior to admission to hospital.

Most of the patients with minimal active disease had been admitted to hospital for various conditions with no symptoms referable to, or connected in any way with, the lungs.

In many cases physical examination failed to disclose signs, although extensive disease was revealed by X-ray examination. (With this may be compared the report by Cooper (personal communication) upon the examination of 9000 Army recruits in the Sixth Australian Division in 1939; then 0·55% of those who had been passed fit by medical boards were subsequently shown by X-ray examination to have active pulmonary tuberculosis.)

Out-Patients.

The results of the first year's detection of otherwise unrecognized cases of pulmonary tuberculosis amongst in-patients were such that a decision was made in 1948 to extend the system to out-patients.

This move was coincidental with the establishment of the Perth Chest Clinic, facilitating the disposal and follow-up examination of suspects and patients.

All new out-patients were subjected to chest X-ray examination with miniature films, without undressing, as a routine measure prior to being referred to appropriate clinics. Old out-patients, who had not undergone chest X-ray examination during the previous two-year period, were also directed to the radiological department.

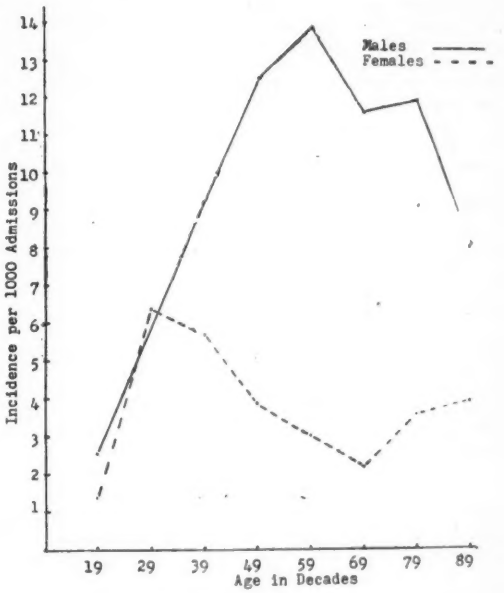

FIGURE I.

Incidence of active pulmonary tuberculosis among in-patients according to age.

TABLE II.

Pulmonary Tuberculosis—Out-Patients.

Yearly Period.	Number of Patients.	Minimal Lesion.			Moderately Advanced Lesion.			Far Advanced Lesion.			Total.	Number of All Types of Tuberculous Patients per 1000.	Number of Patients with Active and Infectious Tuberculosis per 1000.
		Proven Active.	Probably Active.	Probably Inactive.	Proven Active.	Probably Active.	Probably Inactive.	Proven Active.	Probably Active.	Probably Inactive.			
July, 1948, to June, 1949	6625	1	1	11	11	3	2	13	1	—	43	6·5	3·8
July, 1949, to June, 1950	9155	8	2	21	9	5	13	11	5	6	80	8·7	3·1
July, 1950, to June, 1951	8883	12	1	28	13	3	31	7	1	2	98	11·1	3·6
Totals	24,663	21	4	60	33	11	46	31	7	8	221	8·8	3·5

TABLE III.

Distribution of In-Patients with Active Pulmonary Tuberculosis.

Decade. (Years.)	Medical Wards.	Eye Wards.	Surgical Wards.	Gynæcological Wards.	Fracture and Orthopædic Wards.	Ear, Nose and Throat Wards.	Skin and Radiotherapy Wards.	Psychiatric and Allergy Wards.
13 to 19	3	—	—	—	—	—	—	—
20 to 29	14	—	3	2	—	1	—	—
30 to 39	7	—	2	—	2	1	1	—
40 to 49	10	—	5	—	2	—	—	1
50 to 59	12	—	3	—	—	1	—	—
60 to 69	9	1	4	1	—	—	1	—
70 to 79	14	—	3	—	1	—	1	—
80 to 89	3	—	1	—	1	—	1	—
90	—	—	—	—	—	—	—	—
Totals	72	1	21	3	6	3	4	1

The incidence of proven disease according to age and sex for the three years under survey is shown in graph form (Figure I). The incidence amongst males is approximately two and a half times greater than that amongst females; it rises steadily to reach a peak at the sixth decade, when 1·4% of males admitted in that age group were found to be infectious. In comparison, the incidence of active disease amongst females reached its maximum at 0·6% during the third decade.

In-Patient Distribution.

The distribution, covering a two-year period, of 111 infectious patients throughout the various wards to which they had been admitted, is shown in Table III.

Accurate comparative statistics cannot be presented owing to ignorance of departmental admission figures; however, it is evident that infectious patients were distributed throughout the entire hospital.

The causes of admission, for three-quarters of the 72 infectious patients occupying medical beds, were symptoms produced by pulmonary tuberculosis. Examples of other causes were: diabetes, 4; arthritis, 2; cystitis, 1; nephritis, 1; cerebral astrocytoma, 1; cardio-vascular disease, 1. Of the 21 surgical patients, causes of admission were: ischio-rectal and anal abscess, 9; acute urinary retention, 5; cholecystitis, 1; inguinal hernia, 1.

Out-Patient Distribution.

In approximately two-thirds of the patients referred to medical clinics, pulmonary tuberculosis was the pathological condition causing the symptoms complained of. Amongst the remaining third, together with patients from other clinics, symptoms referable to pulmonary tuberculosis were either absent or sufficiently mild to be elicited only upon direct questioning, this despite the extension of the disease in many cases.

Trainee Nursing Staff.

Prior to 1946 trainee nurses underwent routine chest X-ray examination upon commencement and completion of their course. Pulmonary tuberculosis was not uncommon, but no exact figure is available. Since 1946 miniature chest X-ray pictures of trainees have been taken at approximately six-monthly intervals. Upon completion of training, seventeen inch by fourteen inch films are used.

All trainees were subjected to Mantoux tests, and no nurse was posted to a tuberculosis ward unless her Mantoux reaction was positive. If it was negative, the test was repeated at three-monthly intervals, appropriate action being taken should conversion be noted. Despite this procedure, the incidence of active tuberculosis was approximately eight per 1000 *per annum* during the years 1946 and 1947. This did not lessen until all patients were subjected to X-ray examination.

It is considered that a factor contributory to the lowered incidence is the care now shown by nurses attending helpless patients. They are now cognizant of the fact that any patient may be infectious and consequently mask when in contact with patients, whether or not the patients are diagnosed as being tuberculous.

B.C.G. vaccination of negative Mantoux reactors was adopted as an additional preventive measure in March, 1949.

That the incidence of pulmonary tuberculosis amongst the nursing profession is still high is borne out by examination of trained nurses, not graduates of our own training school, who have applied for positions since January, 1948. Of the 65 examined, four were discovered to be suffering from bacteriologically proven active pulmonary tuberculosis. These trained staff from other States had been either nursing private patients or working for periods in small hospitals and, in some instances, larger hospitals.

Conclusion.

The value of routine chest X-ray examination of all hospital in-patients and out-patients is shown, both for the detection of patients suffering from pulmonary tuberculosis, and for the protection from infection of the nursing staff.

It is essentially an integral part of any tuberculosis control programme, of benefit to the patient, the hospital staff and the community.

TABLE IV.

Out-Patient Clinics—Distribution of Patients with Active Pulmonary Tuberculosis.

Decade (Years).	Medical Clinic.	Eye Clinic.	Surgical and Gynæcological Clinics.	Casualty; Orthopædic and Rheumatic Clinics.	Ear, Nose and Throat Clinic.	Skin and Radiotherapy Clinics.	Psychiatry and Allergy Clinics.	Total.
13 to 19	4	—	—	1	—	—	—	5
20 to 29	4	1	2	2	1	1	—	11
30 to 39	9	—	2	1	1	4	—	17
40 to 49	4	—	2	5	1	2	—	14
50 to 59	8	2	1	1	—	—	—	12
60 to 69	7	2	1	2	1	—	—	13
70 to 79	3	1	1	1	—	4	—	10
80 to 89	1	—	—	—	—	2	—	3
90	—	—	—	—	—	—	—	—
Totals	40	6	9	13	4	13	—	85

Acknowledgements.

My thanks are due to Dr. Alan King, State Director of Tuberculosis Control, for his encouragement and help in the preparation of this report, and to his staff at the Perth Chest Clinic for their assistance in the investigation and follow-up of patients.

TABLE V.

Tuberculosis among Members of the Trainee Nursing Staff.

Year.	Number of Nurses on Staff Through the Year.	Number of Cases of Active Pulmonary Tuberculosis.
1946	440	3
1947	500	4
1948	620	1
1949	600	—
1950	670	—
1951 (9 months only)	571	—

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AN OUTBREAK OF BORNHOLM DISEASE IN NEW GUINEA.

By CARL E. M. GUNTHER, M.D., B.S., D.T.M. (Sydney), D.T.M. & H. (England),

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AT Bulolo, during late December, 1951, and January, 1952, there was a widespread epidemic of ordinary influenza among both whites and natives. As it waned there appeared among the whites another condition which I had never seen before; it was obviously not influenza, dengue fever or malarial fever. It was characterized generally by muscular pain and tenderness, and by a moderate rise of temperature, lasting for from two to five days. Its clinical manifestations were so varied that it was not until some twelve cases had appeared that the connexion between them was verifiable, and a tentative diagnosis possible; then, in March, some well-defined cases appeared—these were typically the epidemic pleurodynia form of Bornholm disease. In all, during February and March, there were 24 patients among approximately 600 whites; these fell into four clinical groups, as outlined below. In addition there were some ten others whose symptoms were so vague or so transient that I cannot guarantee their diagnosis, although I feel sure that they must have had very mild forms of Bornholm disease.

The four clinical groups into which these cases fall are not completely distinct—they merge into one another, and close examination reveals that most features are always present, though different ones predominate in different cases. The groups share certain common features: widespread muscular pain and tenderness, headache, anorexia, and frequently a little dryness and irritation of the throat; in the mornings a temperature of 99° to 100° F. and a pulse rate of 80 to 90 per minute, and in the evenings a temperature of 100° to 102° F. and a pulse rate of 90 to 104 per minute; frequent irregular sweating; the urgent passing of several loose stools early in the disease, with later constipation; and a normal or slightly raised white cell count. The duration of the illness runs from two to five days, and recovery is rapid.

In the classical group a patient with a typically severe infection suffered acute pain, worse on movement, and very acute tenderness in the muscles of the neck, shoulders, abdominal wall, buttocks and thighs. There was an especially bad band of soreness across the epigastrium and the lower ribs; gentle compression of the chest, coughing, or deep breathing caused much pain, and any attempt to sit up from the lying position was frustrated by pain in the anterior abdominal muscles. The headache was mild but persistent; slight congestion of the fauces and a slight unproductive cough were present. The chest sounds were normal (in no case was the so-called pleuritic rub heard at any time). The abdomen was doughy and full, and although examination was painful there was neither rigidity nor spasm; early in the disease there was the impression that the abdominal contents were generally tender.

In two cases in which the blood was examined, no malaria parasites were found, and the white cell counts were 12,960 and 7240 per cubic millimetre respectively, with normal percentages of the various forms. In a milder case all these features were present in less severity; in one case the pains and tenderness predominated on the right side, from neck to knee; on the left side only moderate tenderness was present.

All cases of this type occurred among adult males. A second group of patients had less severe pains, with no emphasis on the epigastrium or lower ribs; the temperature range was lower, the anorexia was not so pronounced, and the duration was for two or three days, rarely four. Headache and frequent sweating were just as bad as in the severe cases of the first group. The only patient in this group whose blood was examined had 12,420 white cells per cubic millimetre. This was the commonest type amongst the adults, and two of the children suffered from it also.

The abdominal type was commonest among the children. Typically, a girl, aged ten years, first complained that three times during the first day she had experienced a sudden sharp paraumbilical pain which doubled her up and made her cry out; she then had to lie down, and some pain persisted for varying times up to two hours. On examination of the child, her *rectus abdominis* muscles were found to be very tender on light pressure, and moderate tenderness was present on firm pressure right across the upper part of the abdomen. She had neither pain nor tenderness in other muscle groups. She had a slight supraorbital headache, and no desire for food. During the first day she urgently passed four loose stools; their passage was not coincident with the onset of the attacks of pain. Her tongue was clean. Her pulse rate and temperature followed the usual course. On the second day her white blood cells totalled 10,500 per cubic millimetre. By the fourth day the pain and tenderness had gone, her temperature was normal, and beyond some constipation and fullness in the abdomen she had no complaints. She returned to school, and twice during the next ten days she reported another sharp doubling-up pain of short duration. Since then she has had no trouble.

Six other children and four adults had almost identical histories. The stools of three of the children were examined, but no ova or cysts were seen.

In the fourth group headache was the predominant symptom. An adult male complained of intense headache extending from behind the eyes to the occiput; this came on concurrently with a short rigor on the evening of March 22, 1952. During that night he had two more small rigors and sweated intermittently. When examined on the afternoon of March 23 he was sweating profusely, his temperature was 101·8° F. and his pulse rate was 104 per minute. His only complaints were of headache and complete anorexia. His pupillary and tendon reflexes were normal, there was no head retraction, and his cranial nerves all seemed to be in order. He had very slight tenderness of his neck muscles on firm pressure. The next morning he passed several loose motions, pale in colour, and once vomited bilious matter. His temperature was 100° F. There were no malarial parasites to be found in his blood, and his white cell count was 7120 per cubic millimetre.

On the fourth day he felt better and started to eat, and thereafter made an uninterrupted recovery. Three other adults had the same type of history, but all had less severe headache, lower temperature ranges, less sweating, and somewhat more muscle tenderness.

Rest in bed was obligatory for all these patients; for some, a day and a half was enough, and for others up to four days. Treatment was varied. In three of the most severe cases the patients were given "Chloromycetin"; several of those affected by the muscular type had sodium salicylate; and a few of the patients in the muscular and abdominal groups had sulphonamides. But in retrospect, in every instance the disease seemed to run its own course, entirely uninfluenced by whatever was given. In the later cases the patients were given nothing and progressed just as well.

The distribution of the disease throughout the community was irregular, many of the patients having had no traceable connexion with each other. In four families, however, the incidence was three in four, two in five, three in four, and two in four; but on the other hand, in seven families only one member was affected. Possibly, if further cases develop, a better indication as to the epidemiology of the condition may appear.

Acknowledgement.

Dr. J. T. Gunther, Director of Public Health for Papua-New Guinea, who kindly checked this paper for me, tells me that three years ago there was an outbreak of some 20 to 30 cases of classical Bornholm disease at Port Moresby in Papua.

CUTANEOUS INOCULATION TUBERCULOSIS, WITH A REPORT OF CASE.

By F. S. OWEN,
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THE local lesion following inoculation of the skin with tubercle bacilli is referred to by many names, including post-mortem wart, dissection tubercle, anatomical tubercle, pathologist's wart and *verruca necrogenica.*

As the names suggest, the condition is occupational, having been described in pathologists, anatomists, butchers, veterinarians and milkmaids. It may also occur by auto-inoculation, a tuberculous patient infecting his hand in coughing.

The commonest sites are the knuckles and the back of the hand.

Clinical Syndrome.

Two clinical types are described. In the first a small red swelling occurs at the site of inoculation, and on it a small pustule appears. The swelling slowly enlarges and its base becomes infiltrated and surrounded by a zone of erythema. The regional lymph nodes enlarge early. This type is to be expected when the lesion is the patient's primary tuberculous infection. It is the Ghon lesion of cutaneous tuberculosis.

In the second type an ovoid or lobulated warty swelling forms and enlarges slowly into a bluish-red patch. This cicatrizes in the centre and spreads at the edge, and may continue in this way for years. On pressure, droplets of pus can generally be expressed. Swelling or tenderness of the regional lymph nodes is uncommon. The disease is likely to follow the second pattern in the case of post-primary infection—that is, "the lesion remains local because of a previous increase in the defensive power of the host" (Grady, 1951).

The clinical pictures as described may be modified by other organisms gaining admission at the same time.

Diagnosis.

Michelson (1948) gives the following seven criteria for the diagnosis of tuberculous granuloma: (i) Its occurrence is principally on the hands. (ii) The lesion develops slowly after specific types of injury. (iii) The patient's occupation is significant; for example, he may be a physician, veterinarian or butcher. (iv) The lesion has a verrucous appearance. (v) Microscopic examination of a section of the lesion may show it to be tuberculous (often a difficult diagnosis). (vi) Tubercle bacilli may be demonstrated by examination of a smear or by animal inoculation. (vii) The tuberculin reaction is positive. In addition, histological or bacteriological examination of an involved lymph node may be of value, as in the case to be reported.

Treatment.

Before the discovery of streptomycin the treatment generally used was surgical excision and X-ray therapy, the latter sometimes being employed alone.

Surgery has been the most popular single form of treatment. It includes excision of the skin lesion and the involved lymph nodes. Excision of the cutaneous lesion sometimes necessitates a skin graft.

X-ray therapy appears to be helpful when used both on the primary lesion and on the involved glands.

Since streptomycin has been in use two cases have been described in which it was used without surgery or other specific therapy (Grady, 1951). Bauer (1951) describes a case in which a cure was apparently achieved by potassium para-aminosolicylate (PAS). In the case described below, streptomycin and PAS affected an apparent cure. Other measures described include a diet rich in vitamin *D*, administration of calciferol, and local applications of trichloracetic acid and of silver nitrate. The value of resting the affected limb has been stressed.

Prognosis.

Although fatal cases have been described, the prognosis is generally good in both types of the disease. In a recent review, Grady discussed 30 cases of cutaneous inoculation tuberculosis. In 16 the lesion had healed within six months of inoculation, in five cases healing occurred within twelve months, and in four cases it occurred between two and eight years. In three cases there was healing after an unstated period, in one there was a recurrence twenty years after an apparent cure, and one case was fatal.

Report of a Case.

The patient was a male resident in pathology, aged thirty years. On February 24, 1951, while performing an autopsy on a subject dead of advanced pulmonary tuberculosis, he pricked his finger superficially with a needle. The site of the injury was the dorsum of the left middle finger over the distal joint. He immediately washed his hands and applied tincture of iodine to the wound. Within a few hours he had injections of procaine penicillin (300,000 units) and anti-tetanus serum.

One week later a lesion like a small pimple appeared. Within a few days a little pus formed a bleb about one millimetre in diameter beneath the centre of the lesion. This remained for another few days. The overlying skin was then nicked with a scalpel and a very small quantity of pus removed. During the next two to three weeks several tiny scabs formed and came away.

A Mantoux test then performed on the left forearm gave a strongly positive result. Previous tests had produced negative results. The most recent of these had been carried out in October, 1950—that is, four months previously. A few days later an enlarged left epitrochlear gland and an enlarged left axillary gland were felt.

The honorary dermatologist was consulted. He prescribed X-ray therapy. Four doses of 200*r* were given over the following six weeks. The lesion became dry, was about seven millimetres across and had a central dimple containing a tiny scab. It seemed to be confined to the superficial part of the skin, which was reddish-blue, slightly raised, and papery in consistency.

On June 1 (seventeen weeks after infection) the lesion was slightly larger, but otherwise it appeared to be unchanged. Examination revealed two left epitrochlear lymph nodes,

one about four centimetres above the other. These were firm, non-tender and discrete, and each about one centimetre in diameter. High in the left axilla a similar node about two centimetres in diameter was felt. Several other small lymph nodes were palpable in both axillæ.

There had been no general symptoms. Neither the finger lesion nor the lymph nodes had been painful, and there had been no lymphangitis. The blood count and the erythrocyte sedimentation rate were both normal. X-ray examination of the chest revealed no abnormality, and the blood failed to yield the Wassermann reaction.

It was decided to carry out a block resection of the epitrochlear glands for diagnostic purposes. This was done under general anæsthesia on June 14. Intramuscular injection of streptomycin, 0·5 gramme twice a day, and oral doses of PAS, three grammes four times a day, were given for five days, commencing three days before the excision of the epitrochlear lymph nodes. Histological examination of the excised tissue showed that both lymph nodes contained areas of tuberculous inflammation. The lymphoid tissue was not entirely destroyed. There was more cellular and fibrous reaction than caseation.

The diagnosis having been established, the affected arm was placed at rest in a sling, and streptomycin and PAS therapy as described above was continued. A slight stitch infection was treated by penicillin for five days. Three weeks after the operation the wound had healed completely.

Streptomycin therapy was suspended after a total of 21 grammes had been given. At this stage PAS therapy was continued at the reduced dose of 10 grammes per day for a further twenty-four days.

Ten weeks after the commencement of treatment the enlarged axillary gland was no longer palpable and the patient resumed work.

Eight months after the commencement of treatment there was a barely detectable scar, four millimetres long, at the site of the lesion on the finger. The site of the operation for removal of the epitrochlear lymph nodes was healthy, and the enlarged axillary lymph node appeared to be decreasing in size.

A guinea-pig injected with material from a lymph node died of tuberculosis in thirty-three days. Tubercle bacilli from a node were found to be sensitive to streptomycin. (The subject on whom the autopsy was performed had received streptomycin for six weeks in 1949.)

Summary.

A brief *résumé* is made of the rather scanty literature on this subject, and the clinical types of the lesion, their diagnosis and treatment are discussed.

A case is described of cutaneous inoculation with the tubercle bacillus occurring in the post-mortem room.

Acknowledgements.

I wish to thank Dr. Freeborn, General Medical Superintendent of the Royal North Shore Hospital of Sydney, for permission to report this case; also Dr. E. B. Durie and Dr. C. Graham, of the Kolling Institute of Medical Research, for their help in connexion with it.

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Reviews.

CANCER CYTOLOGY OF THE UTERUS.

IT is over twenty years since Dr. George Papanicolaou, of Cornell University, New York, and Professor A. Babes, of Budapest, reported the recognition of cancer cells in human vaginal secretions. According to Dr. J. Ernest Ayre their work is not yet fully appreciated. Dr. Ayre is Director of the Dade County Cancer Institute, Cancer Cytology Centre, and Chief of the Cancer Research Department, Medical Research Department, Miami, Florida. His book "Cancer Cytology of the Uterus" is designed to illustrate the variations in structure of the cells of the female genital tract in normal and abnormal conditions.[1] It consists mainly of photographs and photomicrographs, many in colour and all excellently reproduced. The collection represents an enormous amount of work. The author states that "during a nine year period more than 150,000 genital cell samples from over 22,000 women were studied. More than 900 cancer patients underwent cytological investigation. These consisted of vaginal smears, cervical cell smears and cell scrapings (surface cell biopsies), the vast majority of which were procured for cell research, although each case was studied individually and primarily for cell diagnosis". Some of this work was apparently done at Montreal; Dr. Ayre was formerly lecturer in gynæcology and obstetrics at McGill University.

The book is divided into nine sections. The first two deal with the development of the author's ideas and techniques; these are followed by a detailed classification of normal cells, and of cells seen in chronic cervicitis. The fifth section is concerned with early anaplastic cells and with "The Precancer Cell Complex". It is high praise to point out that this is the largest section of the book, comprising 189 of a total of 407 pages. Dr. Ayres cares deeply about the earliest beginnings of cancer; and the case histories given show that his human interest in his patients is no less than his scientific interest. Such extremely thorough work as is shown here must surely prove to be of great value. "'Tis not in mortals to command success", but success in the study of cancer is deserved by a team that cuts hundreds of serial sections in order to discover a tiny nest of cancer cells, and then institutes a follow-up of many years' duration. Section six of the book, dealing with pre-invasive carcinoma, is also a long and thorough demonstration of the subject. It is followed by sections dealing with epidermoid carcinoma of the cervix, adenocarcinoma and other genital malignant conditions, and techniques for "total biopsy"—the "ring biopsy histologic method". These last four sections include 47 case histories, most of which are illustrated by photographs of the actual lesion as well as by photomicrographs. The general production of this book is very lavish and must have been extremely expensive. A foreword states that the publication of illustrations used in the text was made possible through the generosity of the Public Health Foundation for Blood Pressure and Cancer Research, Incorporated, Stamford, Connecticut, established by James H. Land, of New York. Some of the photomicrographs have been seen previously in "What's New", published by the Abbott Laboratories, and in "Clinical Symposia", published by the Ciba Pharmaceutical Company. The descriptions of the pictures are good, but the text of the book is written in a somewhat laboured style. It could have been written more clearly in less and shorter words. This is, however, a minor criticism of a very fine book, which should be of great interest to gynæcologists and cytologists.

[1] "Cancer Cytology of the Uterus: Introducing a Concept of Cervical Cell Pathology", by J. Ernest Ayre, M.D.; 1951. New York: Grune and Stratton. 11" × 8½", pp. 420, with 362 illustrations, some in colour. Price: $14.50.

A YEAR BOOK OF UROLOGY.

AN interesting sideline in "The 1951 Year Book of Urology" is the editor's introduction, in which he describes in a frank and friendly way his impressions after spending a month at Guy's Hospital, London.[1] The abstracted material in the volume is divided into seven main sections. Under the heading of general considerations are subsections on examination of the urine, infections, including gonorrhœa, calculi, anæsthesia, instruments and appliances, and miscellaneous material. The section on the kidney covers anomalies, tumours, tuberculosis, trauma, renal insufficiency, miscellaneous conditions and surgical technique. The adrenals have a short section to themselves. The subsections in the section on the ureter deal with anomalies, calculi, tumours and surgical technique, the last-mentioned being the most notable. In the section on the bladder, tumours, surgical technique, micturition, and neurogenic bladder are considered. The bulk of the material on the prostate relates to surgical measures, or more particularly, to prostatectomy: the subsections cover choice of operative approach, transurethral resection, suprapubic, retropubic and perineal prostatectomy, calculi and carcinoma. The last section, that on the genitalia, has subsections on the penis, the urethra, hypospadias, tumours of the testis, scrotal swellings, the

[1] "The 1951 Year Book of Urology (November, 1950-October, 1951)", edited by William Wallace Scott, M.D., Ph.D.; 1952. Chicago: The Year Book Publishers, Incorporated. 8" × 5¼", pp. 384, with 84 illustrations. Price: $5.50.

epididymis, the vasa and the seminal vesicles, infertility, and miscellaneous subjects. The subject matter of the volume is nicely balanced between pathology and clinical aspects. A wide range of journals is covered. The specialist will find reference to journals outside his normal specialist reading; the general surgeon and others interested though not specializing in urology will find current contributions to the subject well covered.

DERMATOLOGY.

"A HANDBOOK OF DISEASES OF THE SKIN" by H. O. Mackey is a manual of dermatology written primarily for use by students.[1] The author does not claim to deal with more than the common skin diseases, but considering the small size of the volume (216 pages), it is remarkably comprehensive, and includes many of the rarities.

The method of presentation is conventional. The first seven chapters deal with anatomy, physiology, symptomatology, ætiology and treatment, and the remaining twenty-six are devoted to general dermatology. There being, as yet, no satisfactory classification of skin diseases, the author has wisely refrained from attempting any, but has grouped them in what he considers the most practical manner.

As might be expected in a book intended for students, the style is dogmatic, and as a result there are a number of statements with which many dermatologists will disagree. For example, the use of 5% sulphathiazole lotion in the treatment of *sycosis vulgaris* would hardly find wide acceptance.

The text is printed clearly on excellent paper, and the binding is good. Many of the illustrations (of which there are thirty-six, in black and white) are of good quality and most helpful, but a few are insufficiently clear to have any practical value.

This book should prove an asset to both students and general practitioners.

ANTIBODIES AND EMBRYOS.

"ANTIBODIES AND EMBRYOS" incorporates material presented in three lectures to the Royal Veterinary College in 1950.[2] The subject is antibodies in the embryo rabbit, and presents experiment, observation and discussion of a high order.

There is a description of reproduction in the rabbit and a brief outline of technical procedures, indicating long-distance planning of a high order, together with skilled operative practice. Significant results from which an increased understanding of immune processes is possible have been obtained.

Ehrlich recognized that antibodies were passively transferred to mice, and that this took place after birth by the colostrum. Newborn rabbits, however, do show antibodies before they have suckled. A search for the reason revealed a difference in morphology of the rabbit placenta, the inverted omphalopleur making possible absorption of antibodies inoculated into the uterine lumen, their concentration in the yolk sac, and then in the fœtal circulation. Interruption of the vitelline veins prevented the passage of antibodies to the embryo. These experiments were controlled by injecting antiserum into one horn of the bicornuate uterus and leaving the opposite one untreated so that its fœtuses could serve as controls. The human fœtal membranes separate the yolk sac from the chorion, and a comparable mechanism is not anatomically possible in the human embryo.

The authors also studied the selection of proteins absorbed by rabbit fœtuses of different ages. It became apparent that the younger embryos—twenty days' gestation—could absorb both bovine and rabbit immune globulins, but the older ones rejected the bovine molecule and absorbed the rabbit ones. In other words, the more mature embryos exhibited a species selectivity, not dependent upon molecule size, as one result of their development.

The authors discuss fœtal antigens, particularly those associated with the red blood cell, and the survival of embryos in mothers sensitized by such antigens, in relation to the hæmolytic anæmia of humans and of mules and mares.

There are many interesting aspects of the problems raised here which await further experiment, and there are technical methods which will doubtless serve as tools for further work. The fundamental research worker will find much food for thought in this brief 90-page monograph.

A YEAR BOOK OF ORTHOPÆDICS AND TRAUMATIC SURGERY.

IN the introduction to "The 1951 Year Book of Orthopedics and Traumatic Surgery", the editor, Edward L. Compere, refers to the decreased incidence and even disappearance of conditions and problems that formerly faced the orthopædic surgeon.[1] The consequent loss of practice had been in part made up by an increase in the number of traumatic injuries requiring orthopædic care. The increase, unfortunately, is only partly relative. This position is reflected in the high proportion of the material in this Year Book that relates to traumatic surgery. Another, but more encouraging, trend is seen in the length of the section on arthritis and rheumatism, which indicates not only the progress that has been made since the introduction of cortisone and ACTH, but also increased interest in the pathogenesis of conditions in this group. The amount of material included of primarily academic interest is also worthy of note; this appears particularly in the section on anatomy, embryology, pathology and physiology of the skeletal system. In the section on osteomyelitis and other infections, a number of articles emphasize the importance of not relying entirely on the antibiotics in the treatment of osteomyelitis; surgical intervention is still the best treatment in certain cases. Other sections in this book are devoted to poliomyelitis, congenital deformities, the epiphyses, tumours, cysts and fibrodysplasia, fractures, surgical technique, amputations and prostheses, instruments, appliances and blood banks, and miscellaneous subjects. In addition, a good deal of material is grouped anatomically. These carefully selected abstracts, with their accompanying editorial comment, should be of value to many general practitioners as well as to orthopædic and general surgeons.

PROGRESS IN RADIOLOGY.

"THE 1951 YEAR BOOK OF RADIOLOGY" has been received from the Year Book Publishers, Chicago; the diagnostic section is edited by Fred Jenner Hodges and John Floyd Holt and the radiotherapy section by Harold W. Jacox and Vincent P. Collins.[2]

In the introduction, the authors refer to the advances made in amplifying the fluoroscopic image. This should soon be a practical proposition and would allow of brilliant screen images with the use of small energizing apparatus. Mass radiography is still advancing and is now being used in investigations of the gastro-intestinal tract. Much space is devoted to angiocardiography and aortography. Mattson warns us against allowing films to touch one another during development as unusual shadows so produced may lead to errors in interpretation. Fraser has developed apparatus for chest examination with the patient in the lateral position and finds it most useful in locating effusions. The Schmidt optical system has been adapted for microfilms and its use allows of the use of 10% less radiation than the conventional methods require. Clamp reports calcification in 15% of all brain tumours. All types of cerebral and cardiac investigations must be done in special clinics by specially trained radiologists with expensive and elaborate apparatus. Interesting contributions on lumbo-sacral pain are described in cases of low back pain. Authors urge restraint in the

[1] "A Handbook of Diseases of the Skin", by Herbert O. Mackey, F.R.C.S.I., L.R.C.P.I., D.P.H. (Univ. Dublin), L.M., F.R.I.A.M.; 1952. Dublin: C. J. Fallon, Limited. 9" × 5½", pp. 226, with 36 illustrations. Price: 7s. 6d.

[2] "Antibodies and Embryos", by F. W. Rogers Brambell, W. A. Hemmings and M. Henderson; 1951. London: The Athlone Press; Sydney: Walter Standish and Sons. 8½" × 5½", pp. 104, with 10 text figures. Price: 12s. 6d.

[1] "The 1951 Year Book of Orthopedics and Traumatic Surgery (November, 1950-November, 1951)", edited by Edward L. Compere, M.D., F.A.C.S.; 1952. Chicago: The Year Book Publishers, Incorporated. 8" × 5¾", pp. 380, with 220 illustrations. Price: $5.50.

[2] "The 1951 Year Book of Radiology (June, 1950-June, 1951)"; Radiologic Diagnosis edited by Fred Jenner Hodges, M.D., and John Floyd Holt, M.D.; Radiation Therapy edited by Harold W. Jacox, M.D., and Vincent P. Collins, M.D.; 1951. Chicago: The Year Book Publishers, Incorporated. 9½" × 6½", pp. 394, with 368 illustrations. Price: $7.00.

diagnosis of miniature chest films and consider that 13% of cases need further investigation before a definite opinion can be given. Little that is new is reported in gastro-intestinal work. An increase in the number of cases of pancreatic carcinoma is reported. Translumbar arteriography is being used with some success in the diagnosis of conditions of the cœliac axis and renal circulation. In the therapy field little advance is reported. It is pointed out that a sound knowledge of physics is necessary in the working out of radiation dosage. Considerable work has been done in connexion with atomic energy, but it will be some time before these effects and the effects of supervoltage therapy can be assessed.

The work is interesting, but the last two editions show a tendency to deal with the unusual and spectacular, rather than with everyday work as met with in general radiological practice.

THE ASTHMATIC CHILD.

DR. G. F. WALKER'S little book, "The Asthmatic Child", has been published again in a second edition with very little alteration.[1] The ten simple exercises advocated as home remedies in the alleviation and eradication of this distressing complaint are clearly illustrated. Most of them are commonly used in places where the value of exercises is appreciated. It is to be hoped that the economic situation in this country will not deprive parents of asthmatic children of the opportunity to possess this inexpensive and very useful booklet. Proper body carriage and flexibility of the chest wall reduce the breathing difficulties which create the serious episodes of asthma. The feeling of well-being which follows the carrying out of systematic exercises of the type recommended by the author also goes far to neutralize the nervous apprehension which lifts the episodes out of the minor category. The homely advice in the text is concisely stated and is non-controversial. It might be more helpful if the author saw fit to expand it in a future edition.

THE UROLOGY OF CHILDHOOD.

PÆDIATRIC UROLOGY, while mostly following the adult pattern, does have certain aspects peculiar to itself, and in their new book, "The Urology of Childhood", T. Twistington Higgins and his co-authors bring these points to notice.[2] The work is not claimed to be a treatise, but is rather a practical guide to the conditions most commonly encountered, as judged by the admissions to the Great Ormond Street Hospital over the past twenty-five years. The clinical picture presented is emphasized, some account is given of the investigations necessary, and the treatment recommended is described, sometimes in detail.

An outline of embryology precedes the congenital abnormalities, and this is followed by the sections on urinary obstruction, comprising nearly one-quarter of the chapters. The rather surprising statement is made that differential kidney specimens are rarely useful, in that even with grossly infected kidneys, organisms are rarely grown. This is thought to be due to the formaldehyde remaining in the catheters. Excretion urography as an aid when chronic renal failure arises from upper ureteric obstruction is not favoured. But no mention is made of delayed radiographs one or more hours after injection, which frequently reveal good detail. The methods of treatment of this state do not include intubated ureterotomy, and after a plastic operation on the renal pelvis, most urologists would leave the ureteric splint in place considerably longer than the forty-eight hours advised. Stewart's method of folding up the kidney to preserve an aberrant vessel is recommended enthusiastically. In bladder neck obstruction, the authors have unfortunately had no experience of the endoscopic measures now so often preferred, and use a cystotomy approach. This is also the case with ureterocele and uretero-vesical stricture. The section on nephroblastoma (Wilms's tumour) is fully descriptive, and like the rest of the book very well illustrated. This also applies to the chapter on congenital external anomalies, where the Denis Browne operation is championed.

This work is very well produced, and well set out in clear paragraphs of short sentences which make reading easy. As an outline of personal experiences of pædiatric urology in a large hospital, it achieves the authors' intention, and is a valuable addition to the rather sparse literature available on this subject. It is, however, far from being a complete work on "The Urology of Childhood".

CLINICAL UROGRAPHY.

A WORTHY successor to other admirable publications by the staff of the Mayo Clinic is "Clinical Urography" by W. F. Braasch and J. L. Emmett.[1] The authors' first objective "to produce a complete treatise on urographic diagnosis" has been amply fulfilled; but their ambition to have it used by students for "a comprehensive and progressive course" may fail (in this country) as the cost of the volume is likely to prove prohibitive.

An excellent introduction to urography is provided by the preliminary chapters dealing with the history and technique followed by examples and descriptions of normal flat (K.U.B.) films and urograms. The succeeding pages deal with everyday urology and are arranged on a pathological basis—stasis, calculi, infections, tuberculosis, cysts, tumours and anomalies.

The two final chapters on special methods of examination and a group of miscellaneous films which do not fit into any other category are most instructive and entertaining for the specialist. Wide selections from many extraneous sources have been added to the resources of their own voluminous files to provide a most comprehensive series.

For reference work, the book is thoroughly and clearly indexed for both text and illustrations, and each series of films has a descriptive legend which is complete in itself so that it is not necessary to refer to the text. In addition there is a clinical and theoretical commentary running *pari passu* with the plates. This may be read with much profit as it exhibits the masterly skill and vast experience of the authors in urographic interpretation. It is brief, lucid and entirely devoid of Americanisms.

The well-known difficulty of securing interesting films which are good enough for reproduction has evidently been overcome by diligent selection from an enormous number. The result is so effective that no illustration fails to show the features for which it is included, and, although more than thirteen hundred films are used, none is redundant. Good quality paper has been used lavishly, but the spacious arrangement adds to the clarity of the exposition and the book remains of a convenient size.

The practitioner who depends largely on his own radiographic interpretation will find this is a work of exceptional value; to students and specialists in radiology and urology it will be well nigh indispensable.

PLASTIC SURGERY OF THE NOSE.

AT first glance "Plastic Surgery of the Nose" by J. B. Brown and F. McDowell appears to be just another of those elaborately illustrated treatises recapitulating Joseph's techniques with perhaps a few modifications. On further examination one is surprised that 379 illustrations can be squeezed into a 427-page book and that much room remains for written material.[2] Finally, one is left with a sensation of pleasure at the large amount of really satisfactory "meat" it contains. Except for scanty historical notes this work is free from descriptions of out-of-date procedures or those not well known to the authors. It therefore remains eminently practical.

[1] "The Asthmatic Child: The Prevention of Asthma by Simple Home Methods", by G. F. Walker, M.D., F.R.F.P.S.G., D.C.H., M.R.C.P.; Second Edition; 1952. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall, Limited. 8¼" × 5¼", pp. 20, with 24 illustrations. Price: 2s. 6d.

[2] "The Urology of Childhood", by T. Twistington Higgins, O.B.E., M.B., Ch.B., F.R.C.S., D. Innes Williams, M.D., M.Chir., F.R.C.S., and D. F. Ellison Nash, F.R.C.S.; 1951. London: Butterworth and Company, Limited. 10" × 7", pp. 296, with 136 illustrations. Price: 64s.

[1] "Clinical Urography: An Atlas and Textbook of Roentgenologic Diagnosis", by William F. Braasch, M.D., and John L. Emmett, M.D.; 1951. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 10" × 7", pp. 742, with 1361 illustrations. Price: £11 17s. 6d.

[2] "Plastic Surgery of the Nose: Including Reconstruction of War Injuries and of Deformities from Neoplastic, Traumatic, Radiation, Congenital, and Other Causes", by James Barrett Brown, M.D., and Frank McDowell, M.D.; 1951. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 10" × 7", pp. 428, with 379 illustrations, 48 in colour. Price: £7 17s. 6d.

Apart from several annoying references to the framework of the nose as its "armature", this American book is presented in a manner singularly free from unusual forms of expression which offend British ears. Much of this book's value depends on the emphasis placed on work on nasal cartilages. In this regard the authors display enthusiasm on trimming the lower alar cartilages without rim incision. An ingenious treatment is advocated for certain cases of collapsed nasal alæ where the nose is shortened by routine methods in such a way that the lower edge of the upper alar cartilage assists in supporting the lower part of the ala. Though advancement of the columella is condemned on the theoretical grounds that one cannot expect advancement of a mucosal edge to be permanent, the authors advocate advancing a subiabial incision towards the mid-line to build up the central part of the upper lip.

Features which alone would make this book well worth studying are the authors' views on excision of periosteum over a hump, their reasons for advocating a separate stab wound for the saw in lateral division of nasal bones, and details of L-shaped preserved human cartilage used in deformities requiring nasal support. Amongst a large amount of miscellaneous information worth noting are suggestions for the use of composite cartilage-and-skin grafts taken from the pinna. A quite unusual feature is a short space devoted to the sandpaper technique for the removal of dirt stains from scars.

Numerous illustrations prove that the methods described have enabled the authors in at least many of their cases to obtain superb results. This volume merits a place in every plastic surgeon's library.

MEDICAL BACTERIOLOGY.

"MEDICAL BACTERIOLOGY", by Sir Lionel Whitby and Martin Hynes, is the fifth edition of a laboratory text-book first published in 1928.[1] The original preface stated that the object of the book was "to present in brief form the accepted views on the relation of bacteria to medicine without burdening the reader with a mass of pros and cons". This book was written, then, for medical students, resident medical officers and those who were embarking on a career of clinical pathology. In their preface to the present edition the authors state that because of "radical changes in the concept and knowledge of the subject, including the remarkable advances during the past decade in the control of bacterial disease by chemotherapy, the entire book has been rewritten so that almost nothing remains of the original text and arrangement". The subject is still, however, presented "as a part of medicine including the view-point of the clinical pathologist". This makes it, first and foremost, a very readable book; it has a quality of interest which many more ambitious text-books, whatever their other merits, often fail to achieve. This is a very important quality, for time is valuable, and attention is, after all, a limited gift. Sometimes it seems as though we are piling up, in weighty text-books and unlimited journals, more reading matter than most of us will ever have time to read. It is therefore refreshing to come on a clear, simple and unpretentious book such as this, full of common sense, and rich in what one might call the "lore" of the laboratory; a compound of wisdom, experience and discrimination. The senior author, Sir Lionel Whitby, is, of course, a past master in the art of clinical pathology and in the art of imparting his knowledge. The medical aspects of the subject are emphasized rather than the minutiæ of academic bacteriology. Beginning with chapters on the general properties of bacteria, on sterilization, cultivation and methods of examination, the authors proceed to touch briefly on infection and resistance, the basis of immunity, hypersensitiveness, practical applications of immunology and chemotherapy and antibiotics. A useful account of common contaminating organisms precedes a systematic series of chapters on the various races of bacteria of medical interest. Chapters on elementary mycology, protozoology and helminthology are included; there is a useful and practical account of the collection and examination of specimens, and some brief notes on the bacteriology of water, milk and food are given. The whole book forms a coherent and assimilable story. Much of it is elementary and necessarily superficial, but it provides an admirably concise and simple introduction to the everyday work of a hospital laboratory: a good foundation for, and an incentive to, the reading of standard text-books on the subjects touched on here. There are a number of useful figures and illustrations, but the pictures of the bacteria themselves—after all, the chief characters in the story—are rather poor.

[1] "Medical Bacteriology: Including Elementary Mycology, Protozoology, and Helminthology", by Lionel Whitby, C.V.O., M.A., M.D. (Cambridge), F.R.C.P. (London), D.P.H., and Martin Hynes, M.D. (Cambridge), M.R.C.P. (London); Fifth Edition; 1951. London: J. and A. Churchill, Limited. 8½" × 5½", pp. 552, with 92 illustrations. Price: 22s. 6d.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Diagnostic Electroencephalography", by Hans Strauss, M.D., Mortimer Ostow, M.D., Med.Sc.D., and Louis Greenstein, M.D.; 1952. New York: Grune and Stratton. 11" × 8", pp. 296, with 46 text figures. Price: $7.75.

Deals with (*a*) general aspects of the electroencephalogram, (*b*) the electroencephalogram in disease, and (*c*) the diagnostic evaluation of the electroencephalogram.

"Edinburgh Post-Graduate Lectures in Medicine"; Volume V; 1952. Edinburgh: Oliver and Boyd. 10" × 6½", pp. 530, with about 150 illustrations. Price: 21s.

Lectures delivered by graduates of Edinburgh in the Edinburgh Medical School under the ægis of the Honyman Gillespie Trust.

"Principles of Refraction", by Sylvester Judd Beach, A.B., M.D., F.A.C.S.; 1952. St. Louis: The C. V. Mosby Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 9" × 6", pp. 158, with 18 text figures. Price: 42s.

The book consists of eight chapters dealing with different aspects of the subject.

"The Medical Clinics of North America"; 1952. Philadelphia and London: W. B. Saunders Company. Melbourne: W. Ramsay (Surgical) Proprietary, Limited. Tulane-Toronto Number. 9" × 6½", pp. 306, with six illustrations. Price: £7 5s. per clinic year in cloth binding, and £6 per clinic year in paper binding.

The volume consists of two parts. The first is a symposium on symptoms with a foreword and twelve articles from the Tulane University, New Orleans. The second is a symposium on the psychological aspects of medicine with a foreword and eleven articles from the University of Toronto.

"Child Rorschach Responses: Developmental Trends from Two to Ten Years", by Louise Bates Ames, Ph.D., Janet Learned, M.A., Ruth W. Métraux, M.A., and Richard N. Walker, M.A.; 1952. New York: Paul B. Hoeber, Incorporated. 9½" × 6½", pp. 324, with seven text figures. Price: $7.50.

The authors come from the Gesell Institute of Child Development.

"A Textbook on the Nursing and Diseases of Sick Children: For Nurses", by various authors, edited by Alan Moncrieff, M.D., F.R.C.P.; Fifth Edition; 1952. London: H. K. Lewis and Company, Limited. 9" × 6", pp. 784, with 161 illustrations. Price: 37s. 6d.

The first edition was published in 1930.

"Conditioned Reflex Therapy: The Direct Approach to the Reconstruction of Personality", by Andrew Salter; 1952. London: George Allen and Unwin, Limited. 9" × 6", pp. 364. Price: 20s.

Based on the work of Ivan Pavlov.

"Problems of Life: An Evaluation of Modern Biological Thought", by Ludwig von Bertalanffy; 1952. London: Watts and Company. 9" × 6", pp. 226. Price: 25s.

Translated from the German.

"S.F.A. Catalogue of Medical Films: A Revised Edition of the Catalogue of Medical Films Published in 1948 for the Royal Society of Medicine and Scientific Film Association"; 1952. London: Harvey and Blythe. 9" × 6", pp. 224. Price: 15s.

The films are classified according to subjects.

The Medical Journal of Australia

SATURDAY, AUGUST 2, 1952.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: surname of author, initials of author, year, full title of article, name of journal without abbreviation, volume, number of first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

THE WORLD HEALTH ORGANIZATION.

A WEEK or two ago we discussed in these columns a book by N. M. Goodman dealing with international health organizations and their work. In that discussion the history of the several organizations was traced from 1851 until the present time. The present-day activities of the United Nations Relief and Rehabilitation Administration (UNRRA) and of the World Health Organization (WHO) were mentioned and stress was laid on the complementary activities of the World Medical Organization (WMO), the object being to secure adequate Australian representation at the next meeting of the last-mentioned body. Since that discussion was prepared there has been received the annual report for 1951 of the Director-General of the World Health Organization to the World Health Assembly and to the United Nations.[1] We propose to give a short general survey of the contents of this report so that the understanding of the medical profession on this important matter will be deepened and its interest extended.

The report consists of an introduction by Dr. Brock Chisholm, the Director-General, and the report proper which is divided into three parts dealing with the threefold activities of the organization. The first part is devoted to the direction and coordination of international health work; the second part describes the assistance given to governments in the different regions in strengthening the health services; and in the third collaboration with other organizations is explained. The Director-General begins with the announcement that 1951 was the third year of full activity for the World Health Organization. It was an encouraging year on the whole—though there were no spectacular advances towards the goals of the organization, there were no disquieting setbacks. The year was characterized by the "gradual but unmistakable" development of a "world health consciousness", and by a broadening of the general concept of the right to health. The Director-General then writes two sentences which are the reason for our reference to the subject and which would justify the dissemination far and wide of the information contained in the report: "Although the universality of this right has long been recognized as an ideal in many religions and philosophies, the people of the world have been all too long willing to accept it only as a general theme and to leave to a hopelessly small number of missionaries and other humanitarians the gigantic task of applying it in practice. Today in the eyes of humanity it has become the duty of those countries more richly endowed with resources and more skilled in their use and conservation to help those less developed to provide the scientific and medical means of improving the health of their peoples." Many countries have given increased attention to the promotion of health as essential to industrial, agricultural and general social and economic advancement. This is shown by the fact that in the training programmes of these countries increasing emphasis has been placed on the social aspects of the prevention of disease. Further, during 1951, as a result of requests from governments, health demonstration areas were established; in these demonstrations health is shown to be an integral part of the social and economic development of the community. When we note that during the year no less than 27 countries asked the World Health Organization to help them with their general programmes of public health administration, we can gain some idea of the extensive ramifications of the work. Visits were paid by headquarters staff to 29 countries for the appraisal of current health programmes and the discussion of new ones. Among the subjects relevant to the organization of public health administration were the principles and practice of public health administration, experiments in local health services, maternity care, rehabilitation of crippled children, education and training of sanitary personnel, occupational health, hygiene of seafarers, kwashiorkor, endemic goitre, the assessment of nutritional states, the nursing needs of underdeveloped countries, and alcoholism. What is described as the "coordinated approach" to health matters has been more widely adopted than before. This approach, we are told, enlists the cooperation of all concerned with the various aspects and implications of particular problems and brings to their solution a team spirit and a common understanding which ensure more valuable results than would otherwise be possible. In regard to teaching and training, opportunities were given to governments to strengthen their health services by the provision of facilities for the personnel to receive advanced training abroad. The Interim Commission of the World Health Organization took over the fellowships programme from UNRRA with funds to finance it. Initially the programme was limited to eleven countries which had been devastated by war. It now covers the whole world. In 1951 665 fellowships were granted to nationals of 73 countries. Of the total, 511 were financed by the World Health Organization; the remainder, although administered by the organization, were financed from other sources. In an appendix we note that at December 31, 1951, Australia held four fellowships. The outstanding problems at the end of the year were those of helping governments to

[1] "The Work of WHO, 1951: Annual Report of the Director-General to the World Health Assembly and to the United Nations", Official Records of the World Health Organization, Number 38; March, 1952. Geneva: Palais des Nations; Australia: H. A. Goddard Proprietary, Limited, Sydney. 11" × 8½", pp. 200, with numerous illustrations. Price: 9s.

select Fellows, of choosing institutions and finding facilities for training, and of guiding Fellows during their studies abroad. The World Health Organization has helped national governments to establish, expand and improve medical educational institutions. In 1951 the most important change in their part of the organization's work has been "the growing tendency to consider the programmes of educational institutions as part of a complete plan for improving the health of a population". It is interesting to note that in connexion with this aspect of the work of the World Health Organization mention is made of the shortage of trained professional health workers in many parts of the world. This fact and the inability of some countries to support highly trained personnel in many of their areas have brought out the need for establishing a larger number of training programmes for auxiliary workers. Steps are being taken to increase the number, and improve the quality, of training institutions for all such workers. The remaining topics discussed in this part of the report include communicable diseases, the coordination of research, epidemiological and statistical services, and matters concerned with drugs and other therapeutic substances and equipment.

The second part of the report deals with assistance given to governments in the strengthening of health services. In 1951 regional offices were established for Africa, Europe and the Western Pacific. This means that regional organizations now exist for all six regions named by the First World Health Assembly. The three regions other than those named are the Americas, South-East Asia and the Eastern Mediterranean. As a result of these regional establishments "more and more responsibility for the work which involves direct negotiation with the countries in the regions is being assumed by the regional offices, headquarters retaining only the responsibility for advising and supervising, and for coordinating and evaluating the programmes". Many pages are given over to a detailed description of what has been attempted and accomplished in the countries in the several regions. In regard to Australia we read that the facilities for the training of personnel from other parts of the region have been examined and that one public health nurse from the Philippines has already received training in Australia as part of a World Health Organization fellowship. This is not a feat of which we can be specially proud; surely more use can be made of our facilities than this.

Of the third part of this report not much need be referred to here. The chief collaboration between the World Health Organization and other bodies has been with the United Nations and specialized agencies such as the International Labour Organization, the Food and Agriculture Organization (FAO) and the United Nations Educational, Scientific and Cultural Organization (UNESCO).

From this brief statement it should be possible for readers to form an idea of the range of activities of the World Health Organization. It is endeavouring to achieve the objects named in its constitution. These are twenty-two in number and were set out in full in these columns on March 18, 1950. We can conclude by referring once more to the two statements of the Director-General already mentioned. The danger is that "the eyes of humanity" referred to by him as seeing the need for countries abundantly blessed to help those which are in need, may be only the eyes of a handful of "missionaries and other humanitarians". The medical profession in Australia should see that its members are at least well informed. If they have the necessary understanding there will be no excuse for failure to act when action is needed.

Current Comment.

THE ENDOCRINE MECHANISM IN FEBRILE RESPONSES.

THE reactions which take place in the body as the result of fever have long excited interest, not only in fever arising as a response to biological trauma, but also in the artificial febrile conditions induced as a method of therapy. Artificial fever, whether induced by an electrical means, such as the various forms of short-wave device, or by the introduction of a pyrogen of some kind, like a bacterial suspension, has been considerably used in the treatment of certain diseased states and subjected to a good deal of study. In this instance it is interesting to recall that the rheumatic diseases have been treated in this way with some degree of success. It has long been known, too, that the effects of artificially induced fever are widespread throughout the body. Fresh interest in the subject has recently been raised by the introduction of endocrine substances like ACTH. Selye and others have described the reactions which can be induced in animals by a number of non-specific stimuli, including heat, and it has been found that these reactions do not appear in the absence of the adrenal cortex.

A further study of the endocrine reactions in response to fever has been made, with special emphasis on the effect upon the leucocytes. W. L. Hubler, G. M. Higgins and J. F. Herrick have carried out an experimental study on laboratory-trained white rats.[1] It is necessary to use animals which are accustomed to being handled, not only to facilitate the work, but in order to dispose of nervous factors which may invalidate the results. These authors are apparently first in this special field of attempts to relate the blood state of febrile rats to the pituitary-adrenal axis. Mere restraint of such animals has been found to cause an increase in the polymorphonuclear leucocytes in the circulating blood and a decrease in the lymphocytes and the eosinophile cells. Therefore the animals used in this work were well accustomed to being handled and to bodily restriction, and the variations of their white cell counts were studied as a control. Fever was induced by a microtherm, and four groups of animals were studied. These groups were normal intact animals, those whose hypophysis had been excised, with and without the adrenal glands, and those whose adrenal medulla had been removed. Blood was obtained from the tail vein of the experimental animals and also of control rats, and the data were compared. The period of fever chosen was one hour.

It was found that cage restriction and other procedures acted as a form of stress, but no confusion of results occurred thereby, as the superadding of fever produced great accentuation of these changes. Neutrophilia, eosinopenia and lymphopenia were observed in the animals with otherwise undisturbed endocrine systems, but the blood picture was quite different in the others. Removal of the adrenals abolished the effects on the eosinophile cells and lymphocytes, and removal of the pituitary gland acted similarly, except for a non-significant increase in the eosinophile cell count. In each instance the number of neutrophile cells was high, but this rise was abolished by removal of both adrenal and pituitary glands. Removal of the adrenal medulla had no effect upon the blood picture after the application of heat. Summing up, the authors conclude that hyperpyrexia induced in these experimental animals produced pituitary and adreno-cortical stimulation. Their work appears to fill a certain gap in our knowledge

[1] *Blood*, March, 1952.

of the mechanism and significance of some of the bodily changes due to stress, and the understanding of the complicated methods by which our bodies protect themselves from invasion and attack from their biological environment promises to become clearer.

UTERINE ACTION—NORMAL AND ABNORMAL.

MANY strange views have been held about the nature and function of the uterus. Ignorance even of its general form is evident among the ancients, who depicted it as bicornuate according to the common mammalian pattern; the first accurate representation of it, according to Castiglioni, was that of Leonardo da Vinci. We come right to our own time before we find any substantial knowledge of the behaviour of the uterine mucosa and muscle in menstruation, pregnancy and parturition, and despite much work on the subject the action of the uterus in relation particularly to parturition is not yet fully understood. The subject of uterine action, normal and abnormal, was taken up in the first Solomon Theron DeLee Lecture delivered, by invitation, at the Chicago Lying-In Hospital in October, 1950, by a visiting English surgeon, W. C. W. Nixon, who, besides surveying current ideas and work on the subject, called very largely on the results of work done with his colleagues at University Hospital, London. The clinical application of these studies suggests methods of treatment of long labour with established primary uterine inertia. Nixon points out that the generally accepted pattern of normal uterine action in labour has been based on contractions from nodal points near the insertion of the uterine tubes. Recent work on the nerve supply of the uterus indicates that there are efferent and afferent nerves to the uterus and that different parts of the uterus have different nerve supplies, and experiments at University College Hospital suggest that various parts of the uterus contract independently in the first stage of labour. The end result of this is the establishment of a peristaltic wave of contractions with relaxation and dilatation of the *cervix uteri*. Multiple pressure readings taken simultaneously from the body of the uterus and the cavity of the cervix indicate that the cervix is able to contract independently of the corpus and has a different response to various drugs. Referring to the chemical aspects of muscle contraction, Nixon outlines the work of other investigators on adenosine triphosphate and actomyosin. Adenosine triphosphate is placed "in the centre of the picture as the essential fuel". Two proteins, actin and myosin, have been extracted from muscle; neither is contractile, but they combine to form a new substance, actomyosin, which under certain conditions in the presence of adenosine triphosphate becomes contractile. It has been shown that the distribution of actomyosin varies in different parts of the human uterus. The relevance of this work to clinical obstetrics is seen in the following further findings: even in the non-pregnant uterus the contractility of the muscle of the corpus is greater than that of the cervix; during pregnancy actomyosin content is considerably increased, especially in the muscle of the corpus; during labour the content of actomyosin in the corpus is much higher and its ability to contract much greater than in the cervix. In pressure recordings of uterine action made at University College Hospital, spontaneous contractions of the cervix occurred at times, but were more usual after the administration of ergometrine. There was no constant relationship between the activity of the cervix and that of the corpus. Drugs of the ergometrine group stimulated the contractions of the cervix chiefly, while oxytocin induced prompt and powerful contractions of the corpus without any effect on the cervix. Nixon considers that these experiments indicate that there is a functioning muscle layer in the cervix, that it contracts in pregnancy and labour, and that ergometrine causes it to contract while oxytocin has no effect on it. Histological studies of the *cervix uteri* at different epochs of life show a loose extrinsic layer of cervical muscle, which is part of a continuous layer of smooth muscle extending from the *fundus uteri* to the vulva. The inner half of the cervix consists chiefly of collagen, and passing through this collagen layer are intrinsic muscles of the cervix comprising immature smooth muscle bundles which run in all directions and probably have little, if any, function. Nixon thinks that the important extrinsic muscular tissue of the cervix has been missed by other workers on account of its retraction after hysterectomy and incision of the uterus. An important practical inference from all these findings is that in the treatment of abortion, oxytocin, which stimulates the corpus, should be the drug of choice, and not ergometrine, since this may contract the cervix.

Nixon goes on to refer to the hazards of long labour associated with uterine inertia: shock, intrauterine infection of the mother and intrapartum infection of the fœtus. It is a truism to say that the prevention of long labour is important, but the fact cannot be overemphasized. As Nixon points out, a psychogenic element may play a part in the ætiology, and the pain-fear-tension syndrome of Grantly Dick Read is known to all. Nixon stresses the importance of the right attitude on the part of attendants to the woman in labour, as well as supportive treatment with special reference to fluid balance, adequate nutrition, active movement early in the first stage, timely use of sedatives and the prevention of acetonuria. He favours the giving of an intravenous infusion of normal saline containing 10 to 20 units of oxytocin to the litre, provided disproportion, malpresentation, excessive parity or fœtal distress is not present; nevertheless, its use should be properly controlled and confined to selected cases. Artificial rupture of the membranes may stimulate labour pains and promote dilatation of the cervix in some cases of inertia. Even after prolonged labour Cæsarean section may become necessary on account of maternal or fœtal distress. Nixon considers that much harm has resulted from the teaching that delivery must at all costs be performed *per vaginam* because the membranes have ruptured, and makes a plea for an extension of the use of Cæsarean section in the treatment of prolonged labour. If the mother or child suffers unnecessarily (whether the effects are immediate or remote), the obstetrician has no right to indulge in Pyrrhic victories.

RADIATIONS AND RADIOMIMETIC DRUGS.

RECENT research has brought to light several marked similarities between the biological effects of certain vesicants and carcinogenic compounds and those of X rays and similar ionizing radiations. E. Boyland has reviewed this research and discussed the causation of the effects on normal and cancer cells.[1] Certain chemical substances induce changes in cells so similar to those caused by radiation that these substances have been called radiomimetic. Both ionizing radiations and radiomimetic drugs (i) inhibit growth of tumours or the whole body; (ii) induce cancer at the site of action; (iii) produce chromosome damage; (iv) produce mutations; (v) cause delayed death with similar post-mortem changes; (vi) cause erythema and inflammation; (vii) destroy viruses; (viii) depolymerize nucleic acid *in vitro*, and probably also *in vivo*; (ix) destroy white cells of the blood, causing leucocytopenia; (x) reduce blood clotting ability, probably owing to reduction of the number of circulating thrombocytes; (xi) cause local greying of the hair; (xii) inhibit the development of immunity which involves the production of antibodies when an antigen is administered; (xiii) destroy complement; (xiv) inhibit sulphydryl enzymes; (xv) produce blisters on the skin; (xvi) cause hæmoconcentration; (xvii) cause nausea and vomiting and lesions of the intestinal mucosa; (xviii) cause delayed hyperglycæmia; (xix) produce fœtal abnormalities in pregnant animals; and (xx) cause negative nitrogen balance, owing either to increased breakdown of protein or to decrease in protein synthesis.

[1] *Endeavour*, April, 1952.

The ability of mustard gas, *bis*-β-chloroethyl sulphide, and particularly the so-called nitrogen mustards such as methyl *bis*-β-chloroethyl amine, to reduce the white cell count has often been observed and the nitrogen mustards have been tried in the treatment of leuchæmia and diseases of the lymphatic glands with some success. The nitrogen mustards are also carcinogenic as well as anti-carcinogenic, as also are radiations. A radiomimetic effect which can readily be demonstrated is the local greying of hair. This effect in mice has been described following X irradiation, nitrogen mustard and the implantation of plutonium. The change appears to be permanent and is probably a somatic mutation. The action of X rays possibly depends upon the free hydroxyl radicals liberated from water. If this were the case, then the effect of X irradiation should be produced by free hydroxyl radicals from some other source. Typical greying of the hair in mice can be so produced by injection of Fenton's reagent (hydrogen peroxide and ferrous sulphate) which has free hydroxyl radicals. Not all the effects of irradiation are produced by all the radiomimetic drugs which have been tried. Thus the carcinogenic hydrocarbons do not readily produce skin blistering or hair greying. The only effects which can be considered useful are the inhibition of tumour growth and the treatment of leuchæmia and similar diseases, and intensive research is going on to find drugs in which these effects are most pronounced. The mustards have been used extensively in the treatment of Hodgkin's disease, but are very toxic and cannot be given by mouth. A number of derivatives have been tried and one, *bis*-β-chloroethyl β-naphthylamine, has been very successful in Hodgkin's disease, can be taken by mouth and has few side effects. It appears probable that substances of this type act as cross-linking agents in chromosomes, so interfering with the division of chromosomes that abnormalities would be formed at cell division. With this idea in mind several chemical substances known to act as cross-linking agents in wool, for example, have been tried. One of these used for treating wool has been tried in the treatment of lymphadenopathies with considerable success. Its disadvantage is that it reduces hæmoglobin content of the blood considerably. The substance is triazine tri-ethylamine-imine.

There is evidence that the radiomimetic cytotoxic agents have another effect on cells. The active substances produce a delayed depolymerization of the thymonucleic acid molecule, similar to that found following X irradiation. A similar breakdown of nucleic acid occurs when free hydroxyl radicals are produced in the nucleic acid solution. The ratio of activity of a nitrogen mustard and X rays in depolymerizing nucleic acid is about the same as in biological effects, that is, $M \times 10^{-6}$ methyl *bis*-β-chloroethyl amine produces the same depolymerization as 100*r* of irradiation.

Not much success has been attained so far in the use of radiomimetic drugs in the treatment of cancer other than those associated with the lymph glands to some extent, but the similarity of the effects of these drugs to the effects of irradiation makes it probable that some new drug or drugs with marked effects on cancer but little effect on normal cells will be found.

ALBUMINURIA.

THE significance of albuminuria is a subject which has been almost relegated to the category of those problems which are considered solved. All clinicians know, however, that it is often hard to answer the question in a single case, and still more difficult to know how far it is necessary to go in the way of investigation, which, to be practical, costs money. The problem now has a different aspect, for mass surveys have made us conscious of man in terms of community units. S. Edward King and Christian Gronbeck have carried out a study of 600 patients who have been investigated in hospital for the elucidation of the single symptom of albuminuria, and give four reasons why it is important to be able to give a positive answer in most instances.[1] These reasons are the insurability of the individual, his suitability for military training, the need for allaying anxiety, and the desirability of instituting appropriate treatment. With these needs in mind, they have devised a standard procedure which, they claim, may with advantage be used for the "screening" of persons who are found to pass albumin in the urine, and have no manifest signs of renal disease. They state that large surveys have shown an incidence of from approximately 12% to 16%, but when the persons examined have been of the age group of military recruits the percentages are much smaller, approximately 3·3%. The procedures used in this survey included an Addis count, a concentration test and a series of urine tests made at stated times and under specially devised conditions intended to make albuminuria manifest. The benign forms of albuminuria are given under the usual text-book headings, but simplified by being grouped under two main types, the simply transitory forms, such as those associated with mild infections and rare in ordinary surveys, and the postural. The authors remark that a voluminous literature has grown up on this type: it does not merit the degree of notice lavished on it, but nevertheless should be firmly impressed on the physician's mind. The pathological types are, of course, mainly associated with nephritis, and the importance of these lies in the fact that they may exist without suspicion having been roused until a chance examination is made. The 600 young people examined in this study were only patients in the sense that they were usually admitted to hospital only for a day or two, with the object of having the standard procedure carried out. When albumin was found in the urine another examination was made again on the same day, and if no further test revealed albumin, and if the urinary deposit showed no abnormality, the condition was regarded as benign. Following admission to hospital a specimen was taken at 8 p.m., and a pooled specimen taken at 6 a.m. was used for an Addis test, and also for a rough test of concentration by observation of specific gravity. The next specimen was taken after the assumption of a lordotic posture while the subject was still in bed, and its maintenance for two hours by keeping pillows under the lumbar section of the spine. Further specimens were taken after a mild degree of activity about the ward. The determination of albumin was made quantitatively by the salicyl-sulphonic acid test, and results were read as "a trace" or grades one to four, which corresponded roughly to rising percentages of protein. Fuller examinations were also carried out on this series of patients, so as to check the accuracy of the screening process. These examinations were complete and searching, including X-ray examinations and biochemical tests. An analysis of the 600 persons tested showed the following figures. The benign forms of albuminuria made up 61% of the whole; the most frequent types were the transitory and postural. The remainder of the subjects were classed as pathological, and of these 7% were diagnosed as having glomerulonephritis and 8·5% pyelonephritis, while the greater proportion of the pathological types were classed as persistent. It should be noted that this total of 600 cases investigated represents only about 0·5% of the whole number of persons examined. The authors conclude that their standard procedure proved to be accurate, and consistent; they introduced certain modifications as time went on which made the test more rapid and less cumbersome. King and Gronbeck also discuss the nature and causes of benign albuminuria, and agree in general with those who connect this harmless condition with certain congenital renal abnormalities. Such conditions seem to offer the best explanation of the so-called lordotic or postural albuminuria. They also hold that albuminuria may be a certain index of renal tubular function, but they find, as others have found, that it is hard to give in every case the true explanation of persistent passage of protein in the urine. Frank renal disease needs no further mention here.

In conclusion it may be remarked that it might be difficult in practice to have Addis counts carried out; such tests are not always welcome in a busy department with

[1] *Annals of Internal Medicine*, March, 1952.

a great number of time-consuming routines to follow. It is doubtful, too, if governments would favour such a degree of care in the examination of men for service with the armed forces, especially when one recalls the wartime difficulties in obtaining even barely decent accommodation for this purpose. Finally, whatever the virtues of such mass investigations may be, it is sad to find once more military necessity as a cogent reason for them.

THE PRESERVATION OF DRIED AND FROZEN PLASMA.

THE obvious advantage of serum and plasma over whole blood in the resuscitation of shocked and severely wounded patients is its capacity for storage over a period of time. During the war of 1939-1945 it was at first assumed that these blood-derived fluids would need to be kept in a refrigerator, but actual experiment showed that serum could be kept at ordinary temperature without loss of functional efficiency. For various reasons serum was preferred in the Australian services, and, although a great deal of work was done on the drying of serum and plasma, it was found that there was little if any advantage in the dried product from the aspect of portability, since distilled sterile water also had to be carried for the process of reconstitution. However, the friendly cooperation between American and Australian services gave many medical officers the opportunity of using plasma, and recent observations on the state of preservation of plasma in America over a ten-year period are of interest. One of a long series of studies on blood, plasma and plasma substitutes carried out in Philadelphia deals with this problem, and the results of experimental work are now published by Max M. Strumia, John J. McGraw and Gilman E. Heggerstad.[1] The material examined by these and associated workers consists of two lots, one dried and frozen plasma chosen from quantities stored for various periods up to ten years and two months, and the other special specimens previously studied, prepared from two pools and then put away for some ten years with the express purpose of test after the expiry of this period. The authors point out that the same reliance cannot be placed in the first series, as, quite apart from variations in the storage time, there may not have been constancy in the methods of drying. Some of the random lots were stored in sealed cans, but the special specimens were kept in glass bottles, with rubber stoppers. All containers were evacuated under negative pressure. All specimens which were frozen were maintained at 20° C., though some of the random lots were subjected to a temperature of 15° C. for a short time. The final storage of the dried products was at room temperature without protection from light. Fifty random specimens of dried plasma were tested and compared with selected samples of dried and frozen plasma; in each instance control specimens of the fresh specimen were tested. The results of these observations showed that most of the essential properties of the fluid were preserved, even after ten years. One exception should be made, that is, the concentration of prothrombin, which was found by performance of Quick tests to fall progressively for about five years, but apparently not appreciably for the next five years. The pH, turbidity, viscosity, prothrombin content, and albumin and globulin content were determined, and compared. It is not surprising in the light of experience elsewhere that turbidity showed some increase in all specimens which had been stored for some years. No special changes in viscosity were observed. No differences were perceptible in the plasma collected by the plain citrate method and those for which a solution of citrate, citric acid and dextrose was used. Perhaps the most interesting of all the tests was the clinical use of the different specimens of preserved plasma. Fifty random specimens of dried plasma, preserved for periods of seven to ten years, were administered intravenously to 29 persons. The proportion of reactions was slightly greater than that usually observed for this type of material, but they were so slight that ordinarily they might pass detection, for there were no subjective sensations, but simply rises in temperature over 1° C. The special series prepared ten years ago for this test gave rise to no reactions at all. It is of importance to note that, except for a slight loss of some prothrombin activity, plasma dried from the frozen state retains its transfusion value after ten years.

[1] *American Journal of Clinical Pathology*, April, 1952.

INTERNATIONALIZATION OF SPECIALIST JOURNALS.

THE current number of *The British Journal of Tuberculosis and Diseases of the Chest*, which now enters its forty-sixth year of publication, announces that the editorial board has been enlarged to include four overseas members, one each from Canada, Australia, South Africa and New Zealand. The Australian member is Dr. Cotter Harvey, of Sydney. The editor, Dr. Philip Ellman, states that the overseas members have consented to obtain for the journal "periodic contributions from experts and others in their respective countries" relating to "the most recent developments arising from socio-clinical research in diseases of the chest, including pulmonary tuberculosis, in their native lands". He hopes that these changes will add to the usefulness and interest of the journal, both by widening its scope and "by drawing into association with us the Dominions overseas". The first member published under the new regime celebrates the eightieth birthday of Sir Robert Young with a short appreciation of his personality and work, written by Dr. G. E. Beaumont.

The *American Heart Journal*, which is in its twenty-seventh year of publication and which ceased a year or so ago to be the journal of the American Heart Association, has also recently enlarged its editorial board and become an international journal. The board now includes in addition to its members in the United States, cardiologists in England, Sweden, Argentina, Switzerland, Canada, France, Denmark, Brazil, Belgium, Holland and Mexico. The editor is Dr. Jonathan C. Meakins. We commend the wisdom of the editorial board in deciding not to change the name of the journal to emphasize the widened scope of its interests. To have done so might well have confused the identity of a publication which enjoys the highest standing and has not undergone any considerable change.

RECENT LITERATURE ON ADDICTION.

THE drug addict crosses the path of most medical practitioners from time to time, but knowledge of the problem and of what can be done for the addict is probably not as complete or as widely spread as it could or should be. The Society for the Study of Addiction, founded in 1884 in Great Britain, has set itself to do something about this. A notable contribution to the task is a special issue of the official organ of the Society,[1] in which H. Pullar-Strecker reviews the literature on addiction published in 1949 and 1950. As is pointed out in the editorial, this is not a simple bibliography; it is described as a summary of all the most important work of interest to the Society (and, we may add, to all who are like-minded), marshalled in an orderly manner under a multitude of headings. It is meant to be read from beginning to end. The journal also contains information about the Society and its members. Thus it serves two commendable purposes: first, it stimulates interest in the important practical problem of addiction and indicates the essentials of modern work and thought on the subject; second, it makes the Society better known.

[1] *The British Journal of Addiction (to Alcohol and Other Drugs)*, January-July, 1951.

Abstracts from Medical Literature.

SURGERY.

Malignant Neurilemmomata of Peripheral Nerves.

J. VIETA AND G. PACK (*The American Journal of Surgery*, October, 1951) review 31 cases of malignant tumours of nerves. In view of the basic fact that these tumours arise from the Schwann cells, they suggest the following classification: (i) benign encapsulated neurilemmoma (neurinoma, peripheral glioma, schwannoma, perineural fibroblastoma *et cetera*); (ii) benign plexiform neurilemmoma (neurofibroma, plexiform neuroma, plexiform neurofibroma, *elephantiasis neuromatosa*); (iii) malignant neurilemmoma (malignant schwannoma, malignant neurofibroma, neurosarcoma *et cetera*). The histogenesis of the tumours is discussed and the relationship of these tumours to Von Recklinghausen's disease elaborated; the authors state that malignant neurilemmomata, usually affecting the deeper nerves, occur in 10% to 15% of cases; the benign encapsulated form, which occurs in 18% of cases, rarely becomes malignant, whereas the plexiform variety not infrequently undergoes malignant change. The sex incidence was equal. The age incidence averaged forty-three years for males and thirty-five years for females; the youngest patient was aged five years, the oldest seventy-one years. The 31 cases were divided into two groups, those associated with and those not associated with stigmata of Von Recklinghausen's disease. There were 11 cases in the first group. The average age incidence was some ten years less in the group with the stigmata. The authors state that the patients usually present with a lump, most often painless. Only three in the series had had pain before the mass was noted. Only 20% had gross neurological signs when first examined; thus the lack of neurological signs does not signify that the tumour does not arise in nerve. Symptoms had usually been present for some two years before the patients sought advice. The authors stress the fact that the apparently encapsulated malignant melanoma has usually invaded the areas of adhesion of the "pseudocapsule" and that these areas are the source of the "local recurrences". Local recurrence may also occur from extension along the nerve or from lymphatic embolism. It is considered that irradiation has little to offer in cases of malignant neurilemmoma. The best prospect of cure in this very serious disease lies in early radical excision of the lesion, which may in some cases necessitate amputation. In 15 of the cases in this series the patients had locally recurrent tumours. Hence, the authors point out, the primary treatment is often inadequate.

Obstructive Jaundice with Negative Findings at Operation.

M. BJØRNEBOE *et alii* (*Acta medica Scandinavica*, Volume CXLI, Number 4, 1952) report five cases of jaundice in which biopsy of the liver displayed histological signs of obstructive jaundice without inflammation, and in which exploratory laparotomy did not afford any explanation of the biliary stasis. They state that these and similar cases published by other authors presumably form a special group of diseases of the liver, in which the flow of bile is impeded by obstruction of unknown causation in the intrahepatic ducts. At the same time they think that some of the cases may be supposed to be unrecognized cases of cholelithiasis with passage of stones.

Surgical Intervention in Massive Gastro-Duodenal Hæmorrhage.

FREDERICK H. AMENDOLA (*Surgery*, March, 1952) discusses the operative treatment in cases in which massive gastro-duodenal hæmorrhage has constituted an immediate threat to life. The qualifications of the patient for whom an emergency operation should be considered because of this threat are, in the author's experience, as follows: (i) age over forty-five years; (ii) rapid blood loss, enough to have produced hæmorrhagic shock, (iii) hæmorrhage manifested by the vomiting of red blood rather than by coffee-ground vomitus or melæna alone, and (iv) repetition or persistence of hæmorrhage after the initial hæmatemesis. He states that operation is unwise on any patient who is having severe gastro-duodenal hæmorrhage unless the diagnosis of peptic ulcer or of some other lesion amenable to surgery has been established with reasonable certainty. Continued severe hæmorrhage, however, constitutes the most urgent indication for emergency operation. While, at operation, the vast majority of bleeding lesions of the stomach or duodenum are readily located by inspection and palpation, in some cases a wide gastrotomy or pyloro-duodenotomy is required to reveal the ulcerated area. The author does a standard subtotal gastrectomy on all patients who come to surgery and does not favour the employment of palliative procedures, such as gastro-enterostomy alone or simple ligation of bleeding vessels. He states that 38 patients had emergency subtotal gastrectomy for massive hæmorrhage, and one only, an ulcer patient known to be suffering from hæmophilia, died. Following gastrotomy alone there was a late fatality due to hepatic insufficiency in an elderly patient who at operation was found to be bleeding from cardio-œsophageal varices.

Vertebral Angiography.

N. O. AMELI (*The British Journal of Surgery*, January, 1952) states that while carotid angiography is now in wide use in diagnosis and localization of intracranial lesions, vertebral angiography is rarely performed because of the deep position of the vessels. Moniz and Alves introduced the method of injecting "Thorotrast" into the subclavian artery against the direction of the blood-flow. The author considered that it would be possible to obtain visualization of vertebral and basilar arteries by injecting the opaque substance into the common carotid artery in the reverse direction to the blood flow, while occluding the carotid artery distal to the site of the injection and the subclavian artery by digital pressure against the first rib. This has been employed in 20 cases on the right side with production of satisfactory films in each case. The technique of introducing "Uriodone" by means of a short neck incision and dissection is described. The normal anatomy of the vertebral and basilar arteries is given in some detail with usual variations, and case reports are appended. Some of these reports indicate the value of vertebral angiography when normal carotid angiography has not been helpful.

"Nylon" and "Terylene" as Nerve Sutures.

S. R. MUKHERJEE AND D. M. DOUGLAS (*The British Journal of Surgery*, November, 1951) have investigated the histological reactions produced by "Nylon" and "Terylene" in nerves, the tensile strength of a single interrupted suture of each of these materials, and the tensile strength of the epineurium in human cadaveric nerves. As controls for the "Nylon" and "Terylene", black silk, human hair, tantalum and stainless steel were studied. The authors' findings are that metallic sutures provoke least tissue reaction, but their tendency to kink and to break makes them difficult to handle. Black silk, "Terylene", "Nylon" and human hair all produce a histiocytic and giant-cell response, but it has not been possible to discriminate between them. All sutures, except hair, are heavier than they need be for the task of holding epineurium together, and there is little doubt that from the point of view of knot-holding properties, silk is the best of the available materials. The authors conclude that, all in all, silk of the calibre of 5/0 is still the best available material for nerve suture, and its calibre could with profit be further reduced.

Branchial Cysts and Fistulæ.

CORNELIUS E. SEDGWICK AND JOSEPH F. WALSH (*The American Journal of Surgery*, January, 1952) present information relative to 75 patients, 16 with branchial fistulæ and 59 with branchial cleft cysts. They continue the use of the terms branchial cyst and branchial fistula, but they point out that there is little evidence to support the hypothesis of the branchial origin of these lesions. Reference is made to papers of Hamilton Bailey, of Great Britain, Meyer, of the United States of America, and E. S. J. King, of Melbourne, on the matter of this lack of evidence and the suggestion that the lesions be named according to their anatomical position or pathological entity. In the authors' series the fistulæ appeared generally from birth to the age of ten years, while the cysts usually appeared between the ages of twenty and thirty years. All the fistulæ were dissected out to the pharynx, small staircase collar incisions being used. While the fistulæ were generally located anterior to the sternomastoid muscle in the lower third of the neck, the branchial cysts were generally placed anteriorly but in the upper third of the neck.

Cholecystitis in Childhood.

ALEX. W. ULIN, JOSEPH L. NOSAL AND WILLIAM L. MARTIN (*Surgery*, February, 1952) review in detail all the cases of childhood cholecystitis found in the literature. They state that before including a case in the series for study, incontrovertible proof of its being one of cholecystitis was necessary; with these qualifications, they conclude that the disease is very uncommon, probably rare, and that certainly choledo-

cholithiasis is rare. They further state, however, that when the disease occurs, surgical treatment is relatively easy and is attended with excellent results. The condition should be kept in mind in the differential diagnosis of recurrent abdominal pain of obscure origin on the one hand and in that of hepatitis and jaundice in children on the other.

ACTH in Treatment of Keloids.

HERBERT CONWAY AND RICHARD B. STARK (*Archives of Surgery*, January, 1952) have studied the use of ACTH in treatment of keloids in two ways. First, the keloids were excised and the patient was treated with ACTH in the post-operative period. Second, corticotropin was combined with hyaluronidase and injected directly into the keloid. Two children had the keloid excised, the defect in one being closed by a split-skin graft and in the other by suture. In one case ACTH was given in a dosage of 60 milligrammes daily for two days and then 40 milligrammes for the next twenty days; after eight months, there was no evidence of the expected luxuriant regrowth of keloid. The other child had 100 milligrammes of ACTH daily given for the first ten post-operative days, and a follow-up in five months revealed no evidence of hypertrophic scarring or keloid formation. A control subject was not given ACTH, and three weeks after operation the scar was again hypertrophic and symptomatic, the patient complaining of pain and itching. A second series of four patients were treated with intra-keloidal injections of ACTH combined with hyaluronidase, a "spreading agent". The conclusion reached in this small series of cases is that symptomatic relief can be afforded patients with keloids by intrakeloid injection of ACTH to which hyaluronidase has been added. It is thought that this therapy may be superior to X-ray therapy for alleviation of symptoms of a keloid, but the treatment offers little for the appearance of the keloid itself. A single injection may be sufficient to relieve itching and pain.

Œsophageal Hiatus Hernia of the Diaphragm.

RICHARD H. SWEET (*Annals of Surgery*, January, 1952) sets forth five reasons for the adoption of a supra-diaphragmatic approach in the operation for repair of hiatus hernia. He states that in the past two types have been recognized and termed respectively "short œsophagus" and "paraœsophageal", the basis of recognition having been basically radiological. However, in only a few of the cases of so-called short œsophagus have the patients in fact an anatomically short œsophagus. Of 87 patients whose X-ray examination indicated a short œsophagus, only four were found to have a truly anatomically short œsophagus. The author prefers a classification comprising (i) sliding hernia, that is, the old "short œsophagus", (ii) parahiatal type, the old paraæsophageal type, and (iii) infrequent variants of the two usual types, that is, a congenitally short œsophagus with a thoracic stomach and a double hernia. Descriptions of these types with diagrams are given. As regards frequency of occurrence of the various types, it is stated that in a series of 111 patients, 87% had a sliding hernia, 4·5% had a congenitally short œsophagus, 6·3% had the parahiatal type and two had the double or composite type. The technique of repair through a supradiaphragmatic approach is given and then a discussion of the results. All 111 patients who were operated upon suffered from symptoms of such severity or such prolonged duration that they sought the relief of surgery. The main symptoms were pain in the epigastric or subxyphoid areas, heartburn, dysphagia and bloating. Other symptoms were intractable pain, massive hæmorrhage or more chronic hæmorrhage. Some patients actually had symptoms of obstruction. Of the patients in the series 87% were completely relieved of their symptoms, and two whose hernia repair was satisfactory at first were known to have developed recurrence.

Hæmangio-Endothelioma of the Liver.

PAUL F. FOX AND LOUIS E. CELLA (*Annals of Surgery*, December, 1951) report the history of a patient, aged ten months, who recovered after resection of a hæmangio-endothelioma of the liver. They state that primary hepatic tumours are rare, but when they are discovered resection should be performed if possible. Reports indicate that good results may follow such a procedure. The baby in the case reported was observed to have a mass in the right upper part of the abdomen which appeared to be asymptomatic. Provisional diagnosis of Wilms tumour was abandoned after investigation, and laparotomy was performed with possible causes such as omental cyst, pancreatic cyst, retroperitoneal tumour and hepatic tumour in mind. The tumour arose from the lower portion of the right hepatic lobe, and was excised by dividing the liver between rows of sutures. The tumour was found on microscopic investigation to be a hæmangio-endothelioma and radiotherapy was administered, but because of pronounced reaction it was discontinued. The authors consider that the value of deep X-ray therapy for liver tumours is questionable, most reports, in fact, indicating that harmful effects may follow from its use.

Orbital Pseudotumours.

THOMAS W. COWAN (*Archives of Ophthalmology*, October, 1951) discusses orbital pseudotumours and reports a case. He states that by pseudotumour he means any tumour of the orbit which is not neoplastic. The cause of these pseudotumours is unknown; both tuberculosis and syphilis have been suggested as ætiological factors. Pathologically they present appearances of chronic inflammation with certain distinguishing characteristics. There may be fibroplastic repair in all stages from dense, hyaloid, almost anuclear tissue to delicate fibroglia and rich nuclear tissue. Foci of lymphocytes are scattered through the tissue, and occasionally lymph follicles with germinal centres are encountered. Signs which may be present are exophthalmos, a palpable mass in 50% of cases, and interference with vision in two-thirds of cases. Paresis of extraocular muscles is common. There is no leucocytosis. Complete regression of the mass without treatment may take place in four or five months. The condition is never recurrent in the same eye. The average age of these patients is forty-five years, the onset of proptosis is rapid, and there are no characteristic X-ray changes in orbital bones. The condition is to be distinguished from chronic orbital myositis, orbital apex sphenoid-fissure syndrome, neoplasm, thyrotoxicosis and pituitary exophthalmos.

Carcinoma of the Rectum Diagnosed by Sponge Biopsy.

SIDNEY A. GLADSTONE (*The American Journal of Surgery*, May, 1952) states that although the five-year operative cure rate for carcinoma of the rectum has advanced from 10% at the beginning of the century to the present rate of 60% and above, there is still ample room for further progress. Statistical studies indicate that on an average nine months or more elapse between the onset of symptoms and the time of operation. Sponge biopsy is advocated by Gladstone in order to lessen this loss of time. Half-inch squares of special cellulose or gelatin foam are held in forceps and rubbed over the floor and edges of the ulcer. The sponge and attached material are immediately placed into a small bottle containing 10% formalin solution, and then the sponge and attached fragments are processed in the same way as other tissues. In a series of 32 patients 15 were diagnosed as having cancer on sponge biopsy, whereas the findings from surgical biopsy were positive in only 13 of these 15 cases. The occasional failure to procure cancerous tissue on surgical biopsy in a case later proved to be cancerous is to be expected. At times it is difficult to visualize the lesion properly, and a single piece of tissue removed may not include the cancer. This failure appears to be less likely in sponge biopsy, which provides for the collection of many tiny fragments rubbed off different areas of the floor and edge of the ulcer. A more representative mixed sample for microscopic examination is said to be obtained by this method.

Carcinoma of the Prostate with Rectal Involvement.

R. J. JACKMAN AND J. R. ANDERSON (*The American Journal of Surgery*, April, 1952) discuss the proctological manifestations of carcinoma of the prostate. They divide the cases of carcinoma of the prostate involving the rectum into three groups: (i) carcinoma of the prostate producing an extra-rectal mass which presses on the rectum, (ii) carcinoma of the prostate which encircles the rectum and produces intestinal obstruction, (iii) carcinoma of the prostate which invades the rectal mucosa. In their series of 27 cases fourteen were in the first group, two in the second and eleven in the third. They state that when the mucosa is invaded it may present thickened folds which bleed easily on trauma, but which otherwise look normal. Biopsy of such mucosal folds will show cells of the carcinoma of the prostate lying among relatively normal glands of the rectal mucosa. Cystoscopy is recommended before operation for all men suffering from carcinoma of the rectum who have urinary symptoms. This is particularly important if the prostate cannot be identified digitally as being separate from the rectal carcinoma.

Special Articles for the Clinician.

(CONTRIBUTED BY REQUEST.)

XXXI.

COMMON EYE DISORDERS OF OLD AGE.

IN old age the commonest cause of eye disorder is likely to be degenerative rather than inflammatory. Hence it is that the most frequent symptom complained of is failing vision rather than pain.

The lesion most frequently met with is undoubtedly senile cataract and it is this very frequency which constitutes its chief danger. All too often the elderly patient who notices his vision is failing jumps to the conclusion that he has "a touch of the cataract" and, firmly believing that "nothing can be done until it is ripe", refrains from consulting a doctor until he is nearly blind. If his diagnosis is correct little if any harm is done, but if the cause of his trouble is something other than cataract, valuable time, which might have been devoted to treatment, is lost. In other words, the greatest danger of cataract is that it is not, and it is wise to remember that cataract should not be diagnosed unless there can be seen objectively some interference with the transparency of the lens. Usually diagnosis is easy. Greyish areas of opacity can be seen in the pupillary area. Their shape and situation may vary, but that is a matter of small importance. The thing that matters is that, by their presence in the pupillary area, they interfere with vision. Sometimes diagnosis is not so easy. The lens may not become obviously opaque, but its centre becomes sclerosed and horny. In such cases, however, it is usually possible to see an amber-coloured centre in the lens. The point to remember is that in all cases of cataract which are sufficiently advanced to give rise to symptoms some abnormality in the transparency of the lens can be seen. In the absence of this sign diminution of vision should not be ascribed to cataract and further search should be made for its cause.

It is usual for the cataract to be more advanced in one eye than in the other and, other things being equal, it is the worse eye which is chosen for operation. As the aphakic eye cannot work in conjunction with its unoperated on fellow, there is nothing to be gained by operating upon the bad eye while the vision of the other remains good. A good general rule to follow is that, until the vision of the better eye has sunk to 6/18 or worse, operation upon the worse eye should not be considered. With present-day methods the degree of "ripeness" of the cataract does not matter much. It is the amount of interference with vision which should be the guide, and it is usually possible to arrange matters so that the eye operated on is ready to take over before the hitherto better eye has become grossly affected, so that at no time is the patient without the use of one reasonably good eye.

A point we should never overlook regarding cataract is the horror which the word creates in the minds of many people. It is therefore wise not to announce bluntly to a patient that he has cataract. It can be explained to him that just as, with increasing years, the hair goes grey, a similar change takes place in the lens of his eye; it goes grey, changing from "clear glass" to "ground glass"; that this process is common to all men and that, when it reaches a stage sufficiently advanced to interfere with vision, we call it "cataract". It is well to emphasize that cataract is not a disease, nor yet a "growth" or a "cancer", and that it does not "destroy the sight", but merely dirties the window through which the light enters the eye. Fears as to the operation may be allayed by pointing out that it is usually not necessary to have a general anæsthetic, that it is quite painless at the time and that post-operative pain is easily controlled. It can be truly said that the worst part of the whole business is having to lie still, but that even this cross can be made lighter by the use of a posture bed and the knowledge that both eyes are covered for only forty-eight hours. Regarding the prognosis, it may be stated that at least 80% of operations result in a useful degree of vision. This may seem discursive, but if one can, by taking time to explain the position, rid the patient's mind of the fears which often possess it, the time is well spent and returns a big dividend at the time of operation.

Glaucoma is the "big bad wolf" of ophthalmology, whether it appears in the catastrophic acute form or the insidious chronic variety. Its incidence is by no means limited to old age, but the lessened vitality of that stage of existence often stimulates it to greater activity. The danger of the acute form is that it may destroy the sight of an eye in a matter of hours. The onset is sudden with severe pain (often radiating down the lower jaw), vomiting and gross interference with vision. The eye is seen to be congested, the pupil enlarged, the cornea steamy and the eyeball as hard as a marble. It is usually taught that the differential points between it and acute iritis, with which it is easily confused, are that in iritis the pupil is small, loss of vision less gross, pain less severe and confined to the eye and brow, and the cornea clear and polished. But that is rather "text-book stuff" and cases will certainly be met with in which the differential diagnosis is almost, if not quite, impossible. In such cases one has to feel one's way with a mild mydriatic such as homatropine and cocaine. If its use dilates the pupil regularly and aggravates the symptoms it should at once be abandoned in favour of eserine sulphate 1%, one drop every five minutes for half an hour and thereafter at hourly intervals until the pupil is contracted. But if the use of homatropine and cocaine results in irregular dilatation of the pupil, the iritis thus disclosed demands atropine sulphate 1% two to three times a day. In either case, if an oculist is at all available, it is wise to pass the patient (and the headache) over to him.

The dangers of the non-congestive type of glaucoma are the stealthy nature of its onset and the fact that the patient so frequently mistakes its symptoms for those of cataract. The symptoms most commonly complained of are the impression that the room is hazy, "full of smoke", and the marked slowness of adaptation when passing from bright to dull light. The first of these is usually more pronounced when first getting up in the morning and passes off as the patient "gets going", but all such attacks of transient variation of vision should excite suspicion of the presence of chronic glaucoma. Examination reveals relative enlargement of the pupil, shallow anterior chamber, usually some degree of "cupping" of the optic disk with the vessels dragged over to its nasal side, and usually some loss of the field of vision, particularly in the lower nasal quadrant. No rise of tension may be demonstrable, either to the touch or by the use of the tonometer. In other cases definite rise of tension is found. It used to be taught that, once the diagnosis of glaucoma was established, operation should be advised, but increasing experience of the unreliability of results in all glaucoma operations has created a body of opinion that it is best to "coast" the patient along on drops, to keep a careful watch on tension and fields, and to operate only when compelled to do so. Drops that may be used are pilocarpine nitrate 1% to 2% or stronger, eserine 0·25% to 0·5%, or a combination of the two (pilocarpine nitrate 1% with eserine sulphate 0·5%). In some cases where these drugs fail "D.F.P." is of use.

Changes due to vascular degeneration constitute a very large proportion of eye disorders of old age. It must be remembered too that the retinal vessels, which can be viewed directly and under magnification, furnish very valuable information as to the probable state of the vascular system as a whole. In the earliest stage of vascular sclerosis there is an accentuation on the "light-streak" on the vessels of the retina which passes on to the formation of "copper wire" and "silver wire" arteries. The veins show pinching where crossed by the arteries, and later become distorted so that they engage the artery at right angles rather than obliquely. Finally the stage of hæmorrhages and exudates is reached. These may be due solely to arteriosclerotic hypertension or occur in association with other manifestations of vascular disease, as in albuminuric "retinitis".

The most dramatic eye manifestation of vascular disease is embolism of the central artery of the retina. The patient experiences unilateral, sudden, complete and usually permanent blindness and the ophthalmoscope shows a milky-white œdematous fundus with a bright red spot at the macula and arteries reduced to the calibre of threads. As the "embolism" which occurs in the aged is usually a thrombosis arising from a preexisting endarteritis, the results of treatment are disappointing and the prognosis is bad.

Thrombosis may also occur in the central vein, in which case the loss of vision, though severe, is less profound and the fundus picture is that of enormously dilated veins writhing in massive hæmorrhages (like purple maggots in a squashed tomato). The vision may recover to a limited extent. In 20% or more of these cases, and usually within three months of the onset, there occurs a rise of tension which is quite intractable and, because of the pain it causes, leads to removal of the eye. In some cases it is not the central vessel which is affected but one of its tributaries, in which case the damage is limited to the area supplied or drained by the tributary concerned.

"Senile degeneration at the macula", which ranges from fine peppering with pigment granules to complete atrophy, may also be included in this group, which claims a vascular

ætiology, for it is due to changes in the finest vessels of the choroid (the choriocapillaris) leading to interference with the nutrient supply of the overlying retina. In many cases the disturbance of vision is far in excess of what one would expect from the ophthalmoscopic appearance. It has been claimed that beneficial results have been achieved in these vascular cases by the use of nicotinic acid (50 milligrammes twice daily). Potassium iodide in small doses over a prolonged period also has its advocates, though Duke-Elder states: "Iodides are safe—probably because they have little effect." In all these lesions dependent upon a failing vascular system the treatment is general rather than local, and one feels that it is undertaken, in the phrase of the late Sir Alan Newton, "out of politeness to the possibilities".

In the vitreous body of the aged endogenous opacities are almost the rule. For the most part they do not interfere with vision but are a source of annoyance as "floating specks before the eyes" and may cause alarm on account of being mistaken for a sign of early cataract. Of more serious import are the hæmorrhages which sometimes occur in the vitreous. Though they often become absorbed to an astonishing extent, they can leave behind them bands of connective tissue (*retinitis proliferans*) which can determine the onset of detachment of the retina. As elsewhere in the body, increasing age increases the possibility of neoplastic growth, and a detachment of the retina occurring in an elderly person should always be regarded as guilty until it proves to be innocent.

In the lids increasing flaccidity of the tissues may give rise to turning outward of the lid margin (senile ectropion), though the exact reverse may be met with—spastic entropion. In either condition a simple operation can put the matter right if the annoyance is sufficient to warrant its performance.

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The World Medical Association.

STATEMENT ON THE MEDICAL ASPECTS OF SOCIAL SECURITY.

THE following statement from the World Medical Association is published at the request of the General Secretary of the Federal Council of the British Medical Association in Australia.

Social security is a concept of great interest to doctors. Its aims—to make possible the development of healthy and happy human beings—in theory, run parallel, even coincide, with those of the medical profession. This necessitates close relations between promoters of social security and medical men. The development of the notion of health during the first half of this century further stresses the need for cooperation between these two groups. Modern medicine more and more stresses that somatic health cannot be achieved without mental health. Health is a synthesis of mental and physical elements, tending toward a state of balance. The views of doctors have become close to those who have inspired the internationally adopted definition of health as complete mental, physical and social well-being.

There is, however, a strong theoretical element in this definition. Well-being is not equal to the sum of satisfactory mental, physical and social conditions as laid down in official and other documents. Rather it is based on an emotionally founded appreciation of these favourable circumstances. The social component, regardless of any absolute qualities it may possess, may not be felt as satisfactory and so will not contribute to a state of well-being. Decisive here are highly complex mental reactions, determined on the one hand by such factors as environment, character, education and heredity, and on the other by the means through which the social security has been achieved.

This is important. Social security as a product of individual effort and a reward for personal ability will promote mental well-being. More debatable are the psychological effects of such a security based on communal activity and on benefits distributed through official agencies sometimes only remotely connected with the beneficiary. Satisfaction leading to a feeling of well-being under such circumstances is very uncertain. Benefits are only too often mistaken for rights. In countries where systems for advanced social security are in operation, the outcome does not, in fact, seem to promote general happiness, a sense of personal obligation, mental well-being, or, therefore, good health.

The average man cannot appraise the relationship between services rendered and equivalent returns, or judge whether he is getting a fair deal. He will tend to disregard the cost, and always suspect that he does not get a return for his money if, through taxation, he pays a lump sum for a number of benefits, each one of which seems to him to be small. If these taxes are high he will be further encouraged to demand more in return, and this, often for political reasons, generally leads to increased returns and to new benefits—at increased cost, increased taxes, and increased or renewed displeasure, all of which endanger mental well-being.

Another point might be made here. Most people are still brought up on old-established principles of ethics and behaviour. One of these is that a man should primarily be responsible for himself and his activities. He finds, however, that his activities are hedged round with restrictions and that many of his former responsibilities are being taken away from him. With them go much of his old freedom and even more of his earnings—and he finds himself burdened with new tasks, this time not for himself but for some remote conception such as the State or the community. Consciously or unconsciously he reacts with displeasure—and again his mental well-being suffers.

The psychological repercussions of modern social security schemes are not altogether satisfactory. They should be studied before new plans are made and further steps taken—or they will get worse. Naturally conditions vary, and the descriptions given of the average man's dilemma are not universally applicable. But they are applicable to those "advanced" countries where efforts to solve the individual's problems by collective measures have had considerable practical consequences, and which are, therefore, held up as examples to others still having a long way to go before they can begin even to think in terms of an advanced social security, or indeed any security at all. Because of this it is imperative that the medical profession's experiences of the functioning of social security schemes should be made known to promoters and administrators of such schemes. They, too, should continuously consult the medical profession before new plans are made or old ones remade, because it is intended that doctors become more and more involved in the determination of liabilities under the systems adopted.

Fundamental for the success of any security system is its psychologically correct structure. It must not allow the individual to forget that his security is primarily a matter for his own efforts. It is unwise for him to be led to believe that the State or community can take over and relieve him of his responsibilities. Any system created without due observance of this will from the very beginning carry within itself its own seeds of destruction. On the one hand it will never really contribute to health equal to well-being—for reasons already given. It will defeat its own ends. On the other hand it will tend to a steady and uncontrollable expansion at equally uncontrollable costs. These serious consequences are already seen in many countries, and they will, with growing over-population and increasing average length of life, become impossible to master. The productive capacity of the country will be so heavily burdened for the benefit of an increasing number of consumers that governments will in the end not be able to stand the cost, unless other equally or even more important fields of activity are neglected. As "social security" in many parts of the world is the political slogan of the day, this may well happen—and as a matter of fact does happen.

The extent to which the individual and his country contribute to his welfare and that of his fellow citizens is a problem for each country to solve, but it is always of great importance to the medical profession. Doctors are concerned because of their experience with various schemes that have been proposed and sometimes adopted. As ILO states, there is a growing tendency to set up public services affording complete medical care, preventive or curative, without distinction of the temporary or chronic nature of the contingency or of occupational or general origin of the disease or accident. There is also a tendency to loosen the ties between benefit right and contribution payment, and to create a public service for the citizenry at large, making all care and supplies available at any time and without time limit, subject only to the doctor's judgement.

The WMA considers this to be incompatible with principles which it believes to be fundamental. If the ties between benefit right and contribution payment are loosened, the individual will ignore the cost of the services given. If insurance principles are abandoned for public service schemes, he will tend to lose his sense of responsibility. If social security costs burden the individual with heavy taxes,

he will end by asking for compensation in the shape of more benefits, and he will tend to place his security more or less completely in the hands of society, forgetting that this society after all is nothing but himself and his neighbours.

All this complicates matters for the medical profession. It is willing and eager to shoulder its own responsibilities. The success of its work, however, is the result of team-work where the team consists of two members: the doctor and his patient. Much depends on the cooperation of the latter. Restoration to health to a great extent depends on the will of the patient to get well: this must be encouraged. If the will is there, doctors can the more easily heal their patients as well as control the functioning of social security in their own field—both fairly successfully. If it is not, they will probably fail.

The WMA would finally like to point out that everywhere in the field of social security stress should be laid on prevention and rehabilitation. The primary aim must be to create healthy conditions of living—for example, with regard to housing, nutrition, clothing, recreation and working conditions. The higher a country's development the less should be the need for official promotion of social security. It might well be asked whether an extensive and costly social security system really is a sign of soundness and advanced development of a country.

The WMA has in this paper so far dealt with some of the consequences of social security which have an indirect influence on the work of doctors. There are more direct ones, the intensity and scope of which are in proportion to the extent to which the medical profession is employed by or tied to the social security organization. As the doctor and his patient form a sort of unit, it is impossible here to make clear distinctions—what has an influence upon the one affects also the other. However, as a social security scheme can do anything between two extremes—one leaving the medical profession entirely free, and the other transforming it into a group of whole-time employees—the General Assembly of the WMA, at its meeting in Geneva, 1948, set down the following twelve principles of social security as expressing the views of the profession on the relationship between itself and social security:

Whenever medical care is provided as part of social security, the following principles should govern its provisions:

I. Freedom of choice of physician by the patient. Liberty of physician to choose patient except in cases of urgency or humanitarianism.

II. No intervention of third party between physician and patient.

III. Where medical service is to be submitted to control, this control should be exercised by physicians.

IV. Freedom of choice of hospital by patient.

V. Freedom of the physician to choose the location and type of his practice.

VI. No restriction of medication or mode of treatment by physician except in case of abuse.

VII. Appropriate representation of medical profession in every official body dealing with medical care.

VIII. It is not in the public interest that physicians should be full-time salaried servants of the Government or social security bodies.

IX. Remuneration of medical services ought not to depend directly on the financial condition of the insurance organization.

X. Any social security or insurance plan must be open to the participation of any licensed physician, and no physician should be compelled to participate if he does not wish to do so.

XI. Compulsory health insurance plans should cover only those persons who are unable to make their own arrangements for medical care.

XII. There shall be no exploitation of the physician, the physician's services or the public by any person or organization.

Some of these principles are self-explanatory, others, perhaps less so. The World Medical Association would like to make the following comments thereon, in order to clarify their meaning:

I. Freedom of Choice of Physician by the Patient. Liberty of Physician to Choose Patient Except in Cases of Urgency or Humanitarianism.

Administrative and financial considerations must not be allowed to interfere with the freedom of the patient to chose (and change) his doctor and vice-versa. The intimate personal relationship between physician and patient makes any compulsion harmful, for where there is compulsion, trust and confidence are impaired to the detriment of the patient's welfare.

II. No Intervention of Third Party Between Physician and Patient.

When medical care is provided as part of social security, the State or the local authority or the insurance company enters into relationship with patient and doctor. Such relationship must not involve interference with essential freedoms of either, and no method of payment of doctor or condition of service should be introduced without prior consultation with and the consent of the medical profession.

III. Where Medical Service is to be Submitted to Control, this Control Should be Exercised by Physicians.

The greater the knowledge of what is being controlled the more efficient—and in medicine the more human—will be the control. Non-medical control of medical service introduces elements of distrust and frustration. The medical profession has never been short of able and devoted doctors, experienced in the practice of medicine, who are prepared to undertake administrative responsibility, and they should hold key positions in the administrative direction of medical services. Medical administrators should be so chosen as to command the fullest confidence of all concerned.

IV. Freedom of Choice of Hospital by the Patient.

This freedom must, of course, have some topographical and medical limitation. It is directed against compulsory usage by patient and doctor of a hospital simply because of its propinquity.

V. Freedom of the Physician to Choose the Location and Type of His Practice.

Except in time of national emergencies, the medical profession is resolutely opposed to the direction of practising physicians to certain places or to certain types of work. Such direction is an infringement of the liberty of the subject. Negative direction—that is, direction by exclusion—is something which may be against the real medical interests of the community in which it operates.

VI. No Restriction of Medication or Mode of Treatment by the Physician Except in Case of Abuse.

The freedom of the doctor to prescribe according to his conscience whatever treatment he thinks necessary for his patient is fundamental to the art and science of medicine. Any compulsion on the doctor to prescribe specific forms of treatment would be to impose on him a therapeutic orthodoxy which would hinder the progress of medicine.

VII. Appropriate Representation of Medical Profession in Every Official Body Dealing with Medical Care.

Just as doctors should be in positions of control at every level in the administrative work connected with medical care under social security schemes, so should they be fully represented on the various advisory bodies at every level. The association of the organized medical profession with controlling and advisory bodies will evoke the maximum sense of responsibility in the medical profession to the community it serves and so be in the highest interests of the patients.

VIII. It is Not in the Public Interest that Physicians Should be Full-Time Salaried Servants of the Government or Social Security Bodies.

This principle is directed against the practice of personal medicine by full-time salaried doctors—against, that is, a full-time salaried State medical service. It is recognized that if the medical profession is to be in a position of control in providing medical care in social security schemes, some full-time salaried administrative posts must be occupied by doctors. It is recognized, too, that some full-time salaried doctors, for example, medical superintendents, may have to be appointed in hospitals owned by the State or the municipality. But as human beings, including doctors, are so variously endowed and by nature unequal in their mental and physical capacities, any attempt to equalize them by establishing fixed salaries will lend to frustration of spirit, discontent, inefficiency, idleness and an unbalanced state of affairs. As a general rule, to pay by salary carries risk of imposing limitation of effort, and in the case of the physician who provides personal medical care this is against the interests of the patient, in fact, detrimental to him. It is

a sound principle to leave to each practising doctor the task of imposing upon himself those limitations of effort which by experience he knows are necessary if he is to give of his best to the patients under his care. Any attempt to restrict hours of work or capacity for earning a reward for work incurs the grave risk of attempting to produce a standard doctor for a standard patient—to put human nature into a straitjacket.

IX. Remuneration of Medical Services Ought Not to Depend Directly on Financial Condition of the Insurance Organization.

The remuneration of doctors providing medical care in a social security scheme must be related to their status and prestige in the community, to the duration, arduous nature and costs of their education, and to the hazards of an occupation which means constant strain and exposure to such risks as infection. The cultural and ethical standards of a civilized society depend for their maintenance and promotion principally upon the integrity and example of the learned professions, of which medicine is one—and one whose influence on society is now greater than at any other time in history. There is a grave danger that social security schemes, however idealistically conceived, will progressively diminish the cohesive moral and cultural force emanating from the corporate life of the learned professions. The fundamental fallacy of the planners of social security schemes is the ignoring of this force, coupled with a tendency to regard practising doctors merely as technicians employing certain technical skills.

X. Any Social Security or Insurance Plan Must be Open to the Participation of Any Licensed Physician and No Physician Should be Compelled to Participate if He Does Not Wish to Do So.

Self-explanatory.

XI. Compulsory Health Insurance Plans Should Cover Only Those Persons who are Unable to Make Their Own Arrangements for Medical Care.

With the high cost of medical care at a time of rapid expansion of medical science, the medical profession recognizes that in a wide range of physical and mental disorders the individual's capacity to meet the full cost of treatment and restoration to health is often severely limited. But the greater degree and range of compulsion the greater will be the loss of personal responsibility. To impose compulsory insurance upon those able to care for themselves is to attack the rights and ideals of minorities in society. The WMA believes that assistance through social security schemes should be given only to those who need it. Those who do not need it should make provision for themselves either through thrift or through voluntary insurance.

XII. There Shall be No Exploitation of the Physician, the Physician's Services or the Public by Any Person or Organization.

Self-explanatory.

Conclusion.

All schemes of social security more or less restrict the liberty of the individual. Such restrictions are and must be accepted by persons living in a community, as a form of self-government. Doctors are interested in and welcome plans for medical care which enable them to look after their patients more efficiently.

Doctors are, however, perturbed by possible unfavourable effects of social security schemes on individual men and women. While they recognize that society has an obligation to help those who through nature, nurture, accident, disease and environment are handicapped in the struggle to survive, they fear the demoralizing effects of State paternalism exercised on adults.

A powerful factor in recovery from illness and in restoration to health is the sense of personal responsibility of the patient for what happens to him. This is something indispensable in the doctor-patient relationship. In what is called the welfare State, social security schemes loom large, and in these schemes the provision of (apparently) free medical services is important. The more the State does for the individual in this direction, the less is the individual sense of obligation and responsibility.

Apart from these psychological considerations, financial implications of social security schemes cannot be without concern to doctors. For example, the demand of patients for drugs leads to a disproportionate expenditure on ineffective remedies. This diverts money from what may be more important medical services, because expenditure on medical services of all sorts cannot be unlimited—except in Utopia.

Modern medical thinking stresses the balance of mental and physical factors in the health and well-being of the individual. Any social security scheme which stresses one factor and neglects the other will disturb this balance to the disadvantage of the individual.

Therefore, it is recommended that:

1. When social security schemes are necessary, they should be developed in the closest collaboration with the medical profession. Such schemes should take into account the psychological effects on the beneficiaries' dependency and diminished responsibility.

Therefore:

2. The fundamental aim of a social security scheme should be to raise the individual to a level at which he can help himself. From this it follows that:

3. Any social security scheme should contain elements that encourage self-reliance and a sense of personal responsibility, and that:

4. Any social security scheme should stress the obligation of the individual to make at least part of his contribution directly to the functioning and costs of the scheme.

British Medical Association News.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held at the Royal North Shore Hospital of Sydney, Crow's Nest, New South Wales, on April 17, 1952. The meeting took the form of a series of clinical demonstrations by members of the medical and surgical staff of the hospital.

Marrow Aplasia following Arsenic Therapy.

DR. I. A. BRODZIAK presented a male patient, aged fifty-two years, who, in December, 1951, had developed epistaxis, which continued intermittently. Then he had had an attack of fever and cough with red spots on the legs, which lasted for about six days, disappeared for two or three days, and then recurred. He was admitted to the Royal North Shore Hospital, Sydney, on January 8, 1952. It was found on inquiry that he had suffered from *lichen planus* for thirty years. Two years before his admission to hospital he had been given a course of "Stovarsal" for this condition, and two weeks before his admission to hospital he had, on his own initiative, commenced another course of the same drug. On examination the patient was found to have a temperature of 102° F., and petechial hæmorrhages were visible freely scattered over both legs; they readily appeared on the arm after the application of a sphygmomanometer cuff, and the result of Hess's test was positive. No other significant abnormality was found clinically. Blood count revealed 3,220,000 erythrocytes per cubic millimetre, a hæmoglobin value of 9·4 grammes *per centum*, and a leucocyte count of 600,000 per cubic millimetre, made up of lymphocytes 98%, neutrophile cells 1% and monocytes 1%. The platelets totalled 1500 per cubic millimetre. On January 29 the hæmoglobin value had dropped to 8·6 grammes *per centum*. The leucocytes numbered 650 per cubic millimetre, made up of neutrophile cells 34%, basophile cells 2%, lymphocytes 48% and monocytes 8%. The platelet count had risen to 25,000 per cubic millimetre. During the succeeding months in hospital the patient's condition was precarious. In spite of a continuous cover of penicillin and later of aureomycin, he had continuous pyrexia; he was apathetic and miserable; he bled from the nostril and gums and had massive hæmaturia, blood transfusions being given frequently Infection was a problem, and the hæmatoma resulting from transfusion became infected, forming an abscess and later an ulcer. Many forms of therapy were tried, including the administration of ACTH. This caused an immediate drop in the leucocyte count by depressing the number of lymphocytes, which comprised 98% of the total leucocyte count. The number of neutrophile cells was not significantly affected. BAL was then given because of his history of having taken arsenic. Marrow biopsy on two occasions showed generalized aplasia. About the middle of February the leucocyte count began to rise, and from then on improvement was steadily maintained. The ulcer on his arm healed

slowly, assisted by local streptomycin therapy, and he was finally discharged from hospital on March 3, to be readmitted on a later date for blood transfusion if it was thought necessary.

Thrombosis of Internal Carotid Artery.

Dr. Brodziak also showed a married woman, aged fifty years, who, in June, 1951, had begun to have giddy turns, which were worse in the morning and were brought on by stooping, sneezing, or coughing. There was no true feeling of rotation, but her head felt as if it would burst and her eyesight became dim. In August she noticed a feeling of numbness in the left side of the abdomen and left hip, which lasted about a month. She also had diplopia and noticed that if she picked anything up in the left hand she would drop it, as it seemed just not to be there. In December she had a blackout, preceded by a feeling of numbness in the left side of the face. Since that time the left hand and arm had become progressively weaker, and when admitted to hospital in January, 1952, she could not close her fingers. She also noticed weakness in the left foot, which dragged when she walked. Physical examination of the patient revealed a blood pressure of 165 millimetres of mercury, systolic, and 115 millimetres, diastolic, but otherwise there was no abnormality in the cardio-vascular or respiratory system. Examination of the nervous system revealed that the patient was right-handed and was intelligent and cooperative. The skull and spine appeared to be normal. The visual fields were generally contracted, with left homonymous hemianopia. Grade 1 retinopathy was found on fundal examination, but there was no papilœdema. The left corneal reflex was diminished, otherwise the cranial nerves were intact. Left hemiparesis was present, greatest in the upper limb. Sensation and coordination were normal. On the left side the deep reflexes were slightly increased, the Babinski response was of plantar type and tone was slightly increased. Lumbar puncture produced cerebro-spinal fluid under a pressure of 130 millimetres of fluid and containing 20 millimetres *per centum* of protein. The diagnosis was established at the neurosurgical unit at the Royal Prince Alfred Hospital, when right common carotid angiography was attempted, and it was found that the right internal carotid artery was thrombosed. The condition of the left arm was improving with physiotherapy.

Tuberculous Meningitis.

Dr. F. A. E. Lawes presented a child, aged eight months, who had been admitted to hospital on January 20, 1952, with a history of vomiting, apathy and drowsiness, screaming attacks and refusal of food, followed by enlargement of the head during the past week. The child was found to have an increased head circumference and tense fontanelle with slight neck stiffness, but no Kernig's sign. Lumbar puncture produced cerebro-spinal fluid under increased pressure; it contained 150 lymphocytes and 14 neutrophile cells per cubic millimetre, an increased protein content, a normal glucose content, and a chloride content of less than 650 milligrammes *per centum*. There was no family history of tuberculosis. A presumptive diagnosis of tuberculous meningitis was made and streptomycin was given, 150 milligrammes intramuscularly twice a day and 30 milligrammes intrathecally every second day. The diet was supplemented with protein and vitamins. The Mantoux test result was positive, and tubercle bacilli were grown from the cerebro-spinal fluid. During the period of treatment, successive examinations of the cerebro-spinal fluid produced wide variations in results, and progress was complicated by feeding difficulties, irregular pyrexial episodes, loss of three pounds in weight, and spastic hemiplegia in extension on the right side with flexion on the left side.

Recurring Respiratory and Limb Paralysis.

Dr. F. H. Hales Wilson presented a youth, aged seventeen years, who, on February 11, 1952, had developed severe occipital headache, stiff neck, backache, vomiting and fever. After temporary improvement, his symptoms returned and he was admitted to the Royal North Shore Hospital of Sydney on February 23. He was drowsy and complained of general weakness, impaired accommodation in the right eye and diplopia on looking to the right. Kernig's sign and slight neck stiffness were present. Lumbar puncture produced a clear fluid with a pressure of 130 millimetres of fluid; no block was apparent. The fluid contained 27 polymorphonuclear leucocytes, 55 lymphocytes and one erythrocyte per cubic millimetre, 100 milligrammes *per centum* of protein, 736 milligrammes *per centum* of chloride, and 37 milligrammes *per centum* of glucose. On February 27 he developed severe frontal headache, drowsiness, paræsthesia in the hands and severe weakness of the upper limbs. Two hours later respiratory paralysis became evident, and he was placed in the respirator until February 29, when he could breathe quite well and his arms were stronger. During March he had four further episodes of the same kind, and required treatment in the respirator for some hours. On March 21 the cerebro-spinal fluid appeared to be normal. X-ray examination of the skull showed no lesion, and the Wassermann reaction was normal. At the time of the meeting the patient appeared to be well, but complained of diplopia. He had still decreased accommodation in the left eye, with diminished deep reflexes in the limbs and a little sensory ataxia in the left arm. Dr. Wilson said that the most probable cause of his illness was viral meningo-encephalitis, but a tumour causing intermittent block of the cerebro-spinal fluid was a possibility. The clinical course did not seem compatible with *myasthenia gravis*, familial periodic paralysis or lead encephalopathy. The blood count was normal and so was the serum potassium content. Dr. R. A. Money, in consultation, had considered the illness to be due either to encephalitis or to a tumour in the third or fourth ventricle, and had suggested electroencephalography and arteriography, to be followed by air studies if indicated. The electroencephalography had since been carried out, and Dr. L. R. Rail had reported "well-marked, regular, bilateral 5-7 c.b.s. waves consistent with a lesion of the diencephalon" due to direct pressure, infiltration or raised intracranial pressure.

Insulin-Resistant Diabetes Mellitus.

Dr. Wilson next presented a married woman, aged fifty years, who had developed *diabetes mellitus* in June, 1949. Her daily insulin requirements had increased from 70 units in April, 1950, to 112 units in July, 1950, 800 units in March, 1951, and 1300 units in September, 1951. In January, 1958, she had begun to have heavy glycosuria and acetonuria, and was readmitted to hospital in an attempt to improve her condition by production of a prolonged state of mild hypoglycæmia. Dr. Wilson said that the maximum daily dose of insulin required had been 1200 units three times a day, but that had now fallen to 800 units three times a day. The Commonwealth Serum Laboratories had supplied special insulin (300 units per millilitre), but that had caused too much local soreness. The patient was well in herself and showed no evidence of any other endocrine disorder. She was presented to the meeting by the courtesy of Dr. Frank Lawes, by whom she had been originally treated.

Addisonian Anæmia with Subacute Combined Degeneration of the Spinal Cord.

Dr. Wilson's third patient, a single woman, aged sixty-three years, had been treated for anæmia since 1948 with liver injections and oral iron therapy, and had improved greatly. She had no further treatment, remaining fairly well until January, 1951, when symptoms of lassitude and unsteadiness of gait returned and she began to lose weight. No treatment was sought, and by August she was much worse, was unable to walk, had flexor spasms of the legs and suffered from urinary incontinence. Investigation at another hospital showed macrocytic anæmia and gastric achlorhydria, for which she was treated with blood transfusions and liver therapy. When admitted to the Royal North Shore Hospital of Sydney on October 30, 1951, the patient lay on her back with the knees drawn up to the chest. Flexor spasms occurred, and extension of the legs was prevented by contractures. She had irregular fever, a large sacral pressure sore, incontinence of fæces and overflow incontinence of urine, which contained pus and yielded coliform bacilli on culture. The knee and ankle jerks were absent, the plantar response was extensor in type, and posterior column sense was grossly impaired. Blood count revealed 3,400,000 erythrocytes per cubic millimetre, a hæmoglobin value of 10·6 grammes *per centum*, and 11,000 leucocytes per cubic millimetre; macrocytes were present. Dr. Wilson commented that at that stage the patient presented a very depressing picture, but in view of the anæmia, sepsis and inadequate previous treatment, it was felt that perseverance and optimism were justified. Treatment was initiated in very large dosage (four millilitres of "Anahæmin", and 40 micrograms of vitamin B_{12} every second day), and orthopædic and urological consultations were held. After administration of "Myanesin", strapping extension was applied to the legs, and three weeks later the legs were bandaged in extension in a plaster cast. The bladder was emptied by catheter, and tidal drainage was effected. With much nursing care and physiotherapy, the flexor spasms gradually ceased. Rectal and then vesical control returned, and the pressure sore healed. The urinary infection was not cured until the

bladder began to empty normally. Blood transfusions were given twice, but the blood picture did not return to normal until sepsis was eliminated. Dr. Wilson said that since February the patient had been learning to walk again, but was handicapped by posterior column sensory loss. It was considered that if that was permanent, she would at least be able to walk with crutches. The plantar responses had become flexor in type. She was at present having 100 microgrammes of vitamin B_{12} by intramuscular injection once a week.

Subacute Bacterial Endocarditis (Second Attack).

Dr. Wilson then presented a single woman, aged twenty-five years, who had had rheumatic fever in 1935 and made a good recovery. She was well until the middle of 1948, when she became unduly and persistently tired and later began to have shivering attacks. She had a loud apical systolic murmur, and although cultural examination of the blood on five occasions revealed no organisms, clinical diagnosis of subacute bacterial endocarditis was made, and treatment was commenced with half a million units of penicillin given daily by intramuscular injection every three hours. Fever continued, although at a lower level, and petechial hæmorrhages appeared at the finger tips and under the nails. With increase of the dose to 2,000,000 units daily, she made an uneventful recovery. She was well and active till October, 1951, when she had hæmoptysis, and in December she began to have joint pains. In March, 1952, she was pale, thin and feverish, the spleen was palpable, the cardiac murmur was unchanged, and retinal hæmorrhage was seen in the right fundus. She was admitted to hospital, and blood culture produced *Streptococcus viridans*, sensitive to penicillin. She was being treated with intramuscular injections of procaine penicillin, 900,000 units three times a day, and was responding well.

(To be continued.)

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

PERTUSSIS ON A SHIP.[1]

Colonial Secretary's Office,
Sydney,
4 March, 1828.

James Bowman, Esq.,
Principal Surgeon.

Sir,

With reference to your suggestion that the women on board the Hooghley, whose children have the Hooping Cough, should be removed to Point Piper, I am directed to inform you that the only safe way appears to His Excellency the Governor to be that of keeping them on board the vessel and that they must therefore remain there for the present.

I have, &c.,
ALEXR. MCLEAY.

Correspondence.

A REPORT ON MEDICAL EDUCATION.

SIR: May I reply in support of Dr. Coppleson's submission that "few if any hospitals in New South Wales make any attempt at intern training"?

How much interns are expected to receive in active training, and how much to just "pick up in experience", is a matter of opinion. But it is a fact that interns feel the need for a consolidation of what they have just learnt, for further guidance in bedside diagnosis, prognosis and therapy, and help in technique of various kinds. The intern wants knowledge; he does not want to learn by his own (and his patients') sometimes sorry experience, if someone can help to avoid pitfalls. But how many are having to do just that?

The number leaving appointments to take up general practice, even before one year is up, is adequate testimony that many feel they are gaining nothing worth while by staying longer, and might as well be earning some money. They might as well be learning outside, by themselves, as inside, by themselves.

The fact is that at most hospitals the intern does more and more routine and less and less training. In a few places he gets some guidance on these routines, and also the benefit of rounds with an honorary. But in many places he is regarded by the general practitioner "honorary" as a non-paid assistant; if he goes on rounds, he learns very little in most instances, due to great hurry or lack of interest or lack of knowledge. The specialists attached are keen to help, but have limited types and numbers of cases. At the country hospitals and some suburban, this is particularly so—even the largest ones. There are excellent exceptions, of course, but too few. At the leading hospitals there is a great advantage in the variety of cases, treatment, the association with specialists, but there is little real attempt at intern training. Many who want it are having to go overseas.

In conclusion, may I say this is not based on my own experience alone, but from conversations with colleagues at many hospitals.

Would it be too much to suggest a test of such opinions—by a circular, either personally addressed, or published in THE MEDICAL JOURNAL OF AUSTRALIA—with such questions as: "How many hours a week do you spend giving anæsthetics?" "How many have you had on active tuition on same?" "How many on routine duties on your own?" "How many hours where some training is being actively carried out?" "Would you like more?" "What type?" *et cetera.*

May I suggest that some practical answers to the problem lie in: (i) publishing of training standards, and gradings of hospitals; (ii) some guidance by the University or Post-Graduate Committee as to what is expected in training; (iii) visits by their representatives to the medical superintendent or keen general practitioner or specialist in the hospital to awaken enthusiasm to teach, and help in the "how and when" of same.

Interns as a group would not only be more fit for their practice of medicine later, but much more satisfied and contented with their tasks at the time.

Of course the University staff may say, "Of course, the great numbers at present . . ." *et cetera*, but let us be honest—was there ever any real attempt before, and is not the present the greatest opportunity ever?

Yours, etc.,
July 7, 1952. "MEDICAL GRADUATE".

THE POLIOMYELITIS EPIDEMIC OF 1950–1951 IN THE NEWCASTLE AREA.

SIR: Dr. Ethel Byrne and Dr. Alan Roberts have given a superficial survey of the poliomyelitis epidemic of 1950-1951 in the Newcastle area, and have described in some detail the methods of treatment which they adopted. The points they stress may be summarized as follows:

1. In the acute stage, rest in bed without the use of any restraining splints, daily hot baths and foments.

2. "All patients were encouraged to move and turn about in bed and were allowed to get up after the three weeks' period, or beforehand if their condition warranted it."

3. After three weeks' isolation a large percentage of the cases were discharged to their homes: (*a*) Nearly all upper limb paralyses. (*b*) Most infants whose home conditions appeared to warrant their effective supervision by the parents.

4. Routine muscle charting was not done, but the progress of the groups of muscles was recorded. No movements were discouraged, and the trick movements were developed if there was no response to the normal movement.

5. No cases remained in bed or received treatment in bed.

6. "Nobody was hindered from exercise in any way whatever."

7. "No patients are attending for out-patient physiotherapy."

8. "Our review clinics are held at intervals of one, two or three months. . . ."

[1] From the original in the Mitchell Library, Sydney.

9. "We did not find the use of respirators to be of any assistance. . . ."

The writers state that they "were much impressed by the principles of Miss Elizabeth Kenny's treatment . . . we have not found it practicable to carry out her ideas throughout . . .".

The methods which they advocate seem to us to be the Kenny methods, but shorn of much of the hard work entailed in systematic reeducation. It is all so gloriously simple. The patient is encouraged to move about in bed, and is allowed up as soon as he can walk, and he accomplishes his own cure by unsupervised and unrestricted exercise. No mention is made of the fretful infant who will try to stand in his cot in spite of marked weakness of both legs and perhaps upper limbs as well, or the other patient with abdominal and respiratory weakness whose position rapidly becomes one of gross spinal deformity unless supported. These cases in our experience are not uncommon.

The article is a dangerous one, liable to mislead practitioners whose experience of poliomyelitis is limited, and to confuse parents. The latter are overjoyed when their child is allowed to walk after a few short weeks without a splint, and consider him well on the way to full recovery. They do not know of the ills that follow in the train of muscle imbalance or fatigue in weak muscles, but Dr. Roberts and his co-author should. Parents will not be so sure of the efficacy of the early treatment when some months later they observe fixed deformity of a foot or a knee or an increasing scoliosis.

It is well known that the grade of severity of the disease will vary considerably in separate epidemics, and also in different areas in the same epidemic—patients with patchy pareses may recover without any treatment whatever. We suspect that many of Dr. Roberts's patients were in this category.

We do not think it wise to dispense altogether with splints in the active phase. We feel that a muscle chart, while it should not be regarded as the sole arbiter of progress, does give useful information, and may determine changes in treatment.

We do not believe it is wise to discharge a patient from skilled supervision after three weeks and thereafter see him at intervals of one, two or three months—nor do we believe that parents, with a little instruction, can become competent reeducators.

The dogmatic statement is made that "we did not find the use of respirators to be of any assistance". The experience at Royal Alexandra Hospital for Children has been quite the reverse (10 deaths out of 46 bulbar cases).

We would sum up by saying that the article gives a cursory review, based on functional grounds, of the early results in 150 cases of poliomyelitis.

Methods of management are advocated which so simplify treatment that it amounts to no treatment at all. We are of the opinion that in many cases of the disease, as we know it, such methods would do incalculable harm if they become the common practice.

On behalf of the Executive Committee of the Australian Orthopædic Association,

A. R. HAMILTON,
Honorary Secretary.

135 Macquarie Street,
Sydney,
July 9, 1952.

POLIOMYELITIS.

SIR: I have read with interest the symposium on poliomyelitis published in THE MEDICAL JOURNAL OF AUSTRALIA of July 5, 1952.

Poliomyelitis victims owe much to the skill and enthusiasm of those who took part. Particularly impressive is the work of Dr. McLorinan and his staff at Fairfield Hospital, and of Dr. Jean Macnamara, who so ably bears the major part of the responsibility for after-care in Victoria. Most of us would agree with her when she says, ". . . the disease poliomyelitis having done its worst, the future usefulness and happiness of the patient depend largely on the details of his care in the programme ahead"—and again, ". . . measures to salvage persons paralysed by poliomyelitis, to give muscles capable of recovery the optimum opportunity to recover, are matters of national importance".

This symposium, which covered so many important aspects of poliomyelitis very thoroughly, was, however, a disappointment, in that it rather neglected psychological aspects of the disease. Dr. Jean Macnamara's words are very apt here: "The years have taught me that one should not concentrate only on the care of the paralysed muscles, but view the patient as a whole." The modifications in personality, character and temperament that may follow residual paralysis, deformity, and the very necessary prolonged after-care deserve the closest study, for they can be as far-reaching in their affects as any physical state. This applies particularly to children, whose mental development is far from complete and stable when they suffer an attack of poliomyelitis. We know that motor activity is one of the most important factors in mental development. It is through muscular action that natural aggression is expressed, new pleasures sought, and new interests found. The ability to give vent to pent-up energies by vigorous muscular activity is important for mental health. Residual paralysis, especially if widespread, therefore has its dangers in the psychological sphere. Add to this prolonged immobilization, splinting day and night with its unavoidable interference with spontaneous movement, avoidance of fatigue and over-exertion, sometimes for years, and we get a picture that poses something of a dilemma.

It would seem that the measures necessary for optimum physical recovery are at variance with the freedom of action necessary for optimum mental development. This is a problem that requires much study and systematic research.

There are many other psychological problems associated with poliomyelitis, and similar conditions, which I shall mention only briefly. For example, the child, already made helpless by the disease, is taken away from his parents and thus his feeling of security is further threatened. The child's mind is like that of a primitive in that it does not recognize such an idea as chance. The disease is often looked upon as a punishment from God, the parents, sometimes even the doctor. Such phantasies may not always be expressed openly, but even so, they are not far beneath the surface. Any thorough plan of treatment should take these factors into consideration. In other words, physiotherapy and psychotherapy should go hand in hand.

Considerations of this nature suggest that a liaison between psychiatrists and those responsible for the care of poliomyelitis victims would probably be of value in the campaign for rehabilitation of these persons.

Yours, etc.,

F. W. GRAHAM.

111 Collins Street,
Melbourne, C.1,
July 17, 1952.

SIR: In the comprehensive symposium on poliomyelitis published in THE MEDICAL JOURNAL OF AUSTRALIA of July 5, no mention is made of the significance of potassium deficiency in bulbar poliomyelitis. I refer to the work of Hyman S. Lans *et alii*, in *The Journal of the American Medical Association*, July 14, 1951, who emphasize that severe prolonged potassium deficiency can be lethal. They administered intravenously a solution containing two to three grammes of potassium chloride in a litre of normal saline, 5% or 10% dextrose or amino acids, so that the patient receives six to twelve grammes of potassium chloride a day. The solution is administered not faster than 120 to 180 drops per minute. They point out that proper treatment of electrolyte imbalance in these patients must include potassium therapy and that this procedure caused marked improvement within twenty-four hours.

Yours, etc.,

MICHAEL ELYAN,
Pædiatrician, Townsville Hospital.

Townsville,
North Queensland,
July 11, 1952.

HYPNOSIS IN CHILDBIRTH.

SIR: Your "Current Comment" (July 12) on "Hypnosis in Childbirth" is incorrect in attributing to Anton Mesmer the origin of the words hypnosis and hypnotism. Although his name has passed into the English language as the verb "to mesmerize", he possessed no insight into the fundamental nature of the condition, believing it to be the result of

external animal and magnetic forces in the form of an invisible fluid. In 1841, and twenty-six years after the death of Mesmer, the eminent Scottish surgeon James Braid attended as an expert witness a public demonstration by Lafontaine in Manchester. He had the intention of exposing him as a charlatan, but was astonished to find the trance condition a reality. Being a man of sober scientific curiosity he undertook investigations. It was he who coined in that year the words hypnosis and hypnotism, believing the condition induced by his method of fixed gaze to be a form of sleep. He then found the condition could be induced by verbal suggestion alone, and correctly assessed it as a psychological state involving an interpersonal relationship and subjectively induced on a basis of suggestion. When he realized the subject was not asleep but really kept alert by the voice and presence of the operator, he unsuccessfully endeavoured to introduce the word "neurypnology". He lectured and demonstrated to the British Medical Association, and his writings led to the success of Liebeault at Nancy, Charcot of Paris, Professor Bernheim, Breuer, and finally Sigmund Freud.

The comparison made between the so-called natural childbirth and frank hypnotism using the deeper trance states is most appropriate. Although Grantly Dick Read takes pains to state that his method is not hypnotism, many would think there is some degree of error in his thinking. It is, of course, a matter of terminology, many erroneously taking their ideas from the more bizarre manifestations induced for entertainment purposes in selected and highly susceptible subjects, whereas waking suggestion, relaxation therapy of Jacobson, and the hypnoidal states form a continuum with the varied trances. Success in childbirth is unwittingly achieved by the unconscious intake of suggestion using the hypnoidal state, prestige suggestion, muscular relaxation, and a ritual of diagrams, explanations and exercises. It is significant that a patient derives little help from books, and success is measured by the effectiveness of interpersonal relationships. When it is frankly realized that a patient leaves a session, not with trained muscles, but able to relax and with big doses of suggestions, it will be understood how the method may be developed in the future.

The tone of your editorial is in welcome contrast with the opposition of the medical Press and opinion of the past. The many grateful patients operated upon by James Esdaile before the era of general anæsthetics (like those of Sampimon and Woodruff in the prison camps of Malaya) were described as a "set of hardened and determined impostors". *The Lancet* in dealing with Elliotson was particularly virulent in its criticism from 1838 onwards. Elliotson was first Professor of Medicine at London University, President of the Royal Medical and Surgical Society, a founder of University College Hospital, and it was he who first introduced Laennec's stethoscope into English medicine and whose methods of clinical examination of the chest are those used today. In 1846 he gave the Harveian oration to the Royal College of Physicians on animal magnetism. In spite of the fact that he was an important contributor and did much to help Wakley establish the journal in 1823, we find it using criticism as follows: "Does he himself (Dr. Elliotson) treat the harlotry which he dares to call science with any respect?" and again, "even the man who reads about such performances is a leper". The British Medical Association Library in Melbourne is fortunate in having in the Council room a complete series of *The Lancet*. Amongst those who forced his resignation, let surgeons note, were Benjamin Brodie and Lister.

My purpose in writing is not in defence of hypnotism, but to suggest that it may be worthy of a place in general medicine as in midwifery. It seems that the words of Robert W. White, of Harvard, are being realized: "Hypnotism . . . ejected from the better consulting rooms, was destined to wander for 100 years in the slums of medical practice, from which disgrace she was not rescued until the eminent neurologist Charcot picked her out of the gutter, examined her reflexes and pronounced her worthy of a place in medical research. More recently . . . she has been allowed to enter the portals of experimental psychology, where in the past 20 years she has begun to live down her reputation, learn the manners of the laboratory, and speak the language of polite science. Yet so recent is her social ascent that even in contemporary studies of hypnotism there occasionally seems to linger the atmosphere of magic and darkened rooms, rather than the clear light of reason."

Yours, etc.,

55 Collins Street,
Melbourne,
July 21, 1952.

J. W. JOHNSTONE.

GREAT ORMOND STREET CENTENARY.

SIR: The Hospital for Sick Children, Great Ormond Street, celebrates its centenary this year. It was in 1852 that a house in Great Ormond Street was bought by Dr. Charles West and converted into a children's hospital. During the years a number of Australians have been associated with the hospital in various capacities. The Australasian Medical Congress (British Medical Association) in Melbourne in August is thought to be a suitable occasion for us to forgather at a buffet lunch. Should anyone not receive an invitation, who is eligible and anxious to join in this event, he may do so by contacting me (telephone JM 1936) before August 25.

Yours, etc.,

12 Collins Street,
Melbourne,
July 18, 1952.

A. MURRAY CLARKE.

A CAMPAIGN AGAINST CANCER.

SIR: Tasmania has already commenced its preliminary campaign in the fight against cancer by education and by the establishment of cancer detection clinics. This has been done by the generosity of Sir Edward Hallstrom, but I feel that the campaign against cancer should not be dependent on individual philanthropists, but should be the responsibility of Commonwealth and State Governments.

In the fight against tuberculosis, this State set up an Anti-Tuberculosis Association, which has now become a branch of the National Association for Prevention of Tuberculosis. I feel that a similar organization should be set up for a cancer campaign, and if there are any States that have such a body, I would be pleased if they would contact me so that we can try to form a national body.

Yours, etc.,

R. J. DAVID TURNBULL, M.B., B.S.,
Minister for Health.

Hobart,
July 21, 1952.

Post-Graduate Work.

THE MELBOURNE PERMANENT POST-GRADUATE COMMITTEE.

PROGRAMME FOR SEPTEMBER.

Overseas Lecturer.

DR. AVERY JONES, who is in charge of the department of gastro-enterology at Central Middlesex Hospital, and also consultant in gastro-enterology of the Post-Graduate Medical School of London and the Royal Navy, will be visiting Australia under the auspices of the Nuffield Foundation and will attend the Australasian Medical Congress (British Medical Association). He will deliver a lecture on "Ulcerative Colitis" at the Royal Australasian College of Surgeons on September 4 at 8.15 p.m.

Country Courses.

Terang.

At Terang on September 13 at 8 p.m., Dr. Kennedy Burnside will give a post-graduate lecture on "Injuries to the Urinary Tract". Enrolments should be made with Dr. W. R. Angus, Honorary Secretary of the South-West Subdivision of the British Medical Association, 214 Koroit Street, Warrnambool. The fee will be 10s. 6d.

Mildura.

A post-graduate week-end will be held on September 20-21 at Mildura Base Hospital with the following programme:

Saturday, September 20: 2.30 p.m., Dr. John Jens, "Common Orthopædic Problems"; 4 p.m., Dr. R. Kaye Scott, "Radium and Deep X-Ray Therapy, Pre-Operative and Post-Operative".

Sunday, September 21: 9 a.m., Dr. Michael Kelly, "Medical Treatment of Arthritis"; 10.30 a.m., Dr. Douglas Leslie, "Latest Developments in the Treatment of Burns".

The fee for this course is £2 2s., or 10s. 6d. per demonstration, and enrolments should be made with Dr. T. L. Barker, Red Cliffs.

Dr. S. W. Williams will attend the Mildura meeting as the representative of the Consultative Council on Poliomyelitis.

Flinders Naval Depot.

Dr. Clive Fitts will lecture on "The Human Face" at the Flinders Naval Depot on September 10 at 2.30 p.m. This is by arrangement with the Royal Australian Navy.

Gynæcology and Obstetrics Refresher Course.

A gynæcology and obstetrics refresher course will be conducted at the Women's Hospital, Carlton, from September 1 to 12. This course is to consist of daily ward rounds conducted in groups, at which the routine work of the hospital will be demonstrated and taught, and of a series of demonstrations. Full details of the programme are available from the Melbourne Permanent Post-Graduate Committee. The fees will be as follows: tuition, £10 10s., payable to the Post-Graduate Committee; residence, £6 per week, payable to the hospital.

Enrolments should be made with the Secretary of the Committee at 394 Albert Street, East Melbourne, as soon as possible, as the number which can be accommodated at the hospital is severely limited.

Congress Notes.

AUSTRALASIAN MEDICAL CONGRESS (BRITISH MEDICAL ASSOCIATION).

THE Executive Committee of the Eighth Session of the Australasian Medical Congress (British Medical Association), to be held at Melbourne from August 22 to 29, 1952, has sent the following information for publication.

Congress Dinner.

The Congress Dinner will be held in the Royale Ballroom at the Exhibition Building at 7 p.m. on Thursday, August 28. Wives of members of Congress may accompany their husbands to the dinner. It will be held in the presence of His Excellency Sir Dallas Brooks, K.C.B., C.B., C.M.G., D.S.O., Governor of Victoria, and Lady Brooks, and evening dress with decorations will be worn. This dinner will probably be the largest ever held in Melbourne, and there is every indication that it will be an outstanding success, with first-class food and wines. On account of limitations of space, not more than 900 persons will be able to attend, and probably it will be necessary to close the list some time before the opening of Congress. Members proposing to be present are invited to advise the Congress Office, 426 Albert Street, East Melbourne, as soon as possible. A contribution of three guineas per person will be required.

Trades Exhibition.

Members are reminded that the Trades Exhibition is an integral part of the Congress and that the exhibitors will have on their stands much that is of interest to all types of practitioners. The products are mentioned in some detail in the handbook. The following is a list of the exhibitors: Andrews Laboratories (Sydney); Angus and Robertson; Amalgamated Dental Company, Limited; Berlei, Limited; Boots Pure Drug Company (Australia) Proprietary, Limited; Burroughs Wellcome and Company (Australia), Limited; British Pharmaceuticals Proprietary, Limited; Butterworth and Company (Australia), Limited; Ciba, Limited; C.I.G. (Victoria) Proprietary, Limited; Drug Houses of Australia, Limited; F. H. Faulding and Company, Limited; Glaxo Laboratories (Australia) Proprietary, Limited; Imperial Chemical Industries of Australia and New Zealand; Johnson and Johnson Proprietary, Limited; Kodak (Australasia) Proprietary, Limited; Chas. McDonald Proprietary, Limited; May and Baker (Australia) Proprietary, Limited; Medical Equipment Services of Victoria; G. Nissel and Company (Australia); Oxygenaire (Australia) Proprietary, Limited; Parke, Davis Products; Pharmaceutical Society of Victoria; W. Ramsay (Surgical) Proprietary, Limited; Reckitt and Colman (Australia), Limited; Schering Proprietary, Limited; Sigma Company, Limited; Wyeth Incorporated.

Royal Australasian College of Surgeons.

ALAN NEWTON PRIZE.

IN 1951 the sum of £1042 was subscribed to provide a prize to recognize the services to the Royal Australasian College of Surgeons of Sir Hibbert Alan Stephen Newton, Kt., a Foundation Fellow and, later, a President of the College.

This sum of money has been invested in authorized trustee investments and the interest used to provide a prize for essays on practical surgical subjects.

In June, 1952, the following regulations concerning the prize were made:

1. The Alan Newton Prize shall be awarded biennially.

2. Candidates for the prize shall be Fellows of the Royal Australasian College of Surgeons (not being members of the Council), the Royal College of Surgeons of England, the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland or Fellows in Surgery of the Royal Faculty of Physicians and Surgeons of Glasgow.

3. Essays must be typewritten in English and must not exceed 75,000 words. Case histories of cited cases must not be included in the typescript, but be placed after it in an appendix.

4. Each essay must be distinguished by a motto and accompanied by a sealed envelope containing the name and address of the author and having on the outside of the envelope the motto corresponding to that on the essay.

5. Essays must reach the Secretary of the College on or before December 1 in the appropriate year.

6. The prize essay and accompanying illustrations and preparations will become the property of the College.

7. Authors may claim essays not awarded prizes upon authenticated application within two years.

8. If no essay is adjudged worthy of the prize no award shall be made.

9. Any unexpended interest may be added to the principal of the fund.

The subject for the first essay shall be "The Pathology and Surgery of Diseases of the Parathyroid Glands", and all entries must be in the hands of the Secretary of the College on or before December 1, 1954.

Naval, Military and Air Force.

APPOINTMENTS.

THE following appointments, promotions *et cetera* are promulgated in the *Commonwealth of Australia Gazette*, Number 49, of July 10, 1952.

NAVAL FORCES OF THE COMMONWEALTH.

Permanent Naval Forces of the Commonwealth (Sea-Going Forces).

Fixing Rates of Pay.—Surgeon Lieutenant (for short service) Samuel Francis Hewitt Haughton is paid the rates of pay and allowances prescribed for Surgeon Lieutenant-Commander whilst acting in that rank, dated 26th May, 1952.

AUSTRALIAN MILITARY FORCES.

Royal Australian Army Medical Corps: Medical.

To be Captains (provisionally), 6th May, 1952.—QX 700160 Daniel Egbert Kleinig and QX700159 John Frederick Hubert Graff.

Citizen Military Forces.

Western Command: Fifth Military District.

Royal Australian Army Medical Corps.—To be Captain (provisionally), 8th May, 1952: 5/26513 Boyd Robert Buttsworth. To be Temporary Major, 16th May, 1952: 5/32255 Captain M. Mayrhofer.

Tasmania Command: Sixth Military District.

Royal Australian Army Medical Corps (Medical).—To be Captain (provisionally), 7th May, 1952: 6/15365 Brian Maxwell Andrea.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps: Medical.

2nd Military District.—To be Honorary Captain, 30th May, 1952: Thomas Inglis Robertson.

The Royal Australasian College of Physicians.

EXAMINATION FOR MEMBERSHIP.

INTENDING candidates for the next examination for membership of The Royal Australasian College of Physicians are informed that the clinical examination will be held on October 7, 8 and 9, 1952, and not in the following week as was previously intended.

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE following have been registered, pursuant to the provisions of the *Medical Practitioners Act*, 1938-1950, as duly qualified medical practitioners: Brand, Victor, M.B., B.S., 1937 (Univ. Melbourne); Waddy, Brian Cadwallader, M.B., B.S., 1952 (Univ. Adelaide); Watson, Alexander Robinson Callachor, M.B., Ch.B., 1941 (Univ. Glasgow); Yeaman, Norval David, M.B., B.S., 1949 (Univ. Melbourne).

The following have been registered in accordance with the provisions of Section 17 (1) (c) of the *Medical Practitioners Act*, 1938-1950: Laumberg, Maximilian; Manheim, Anna; Morgenstern, Herman; Rosleigh, Pelagia; Szarotz, Stanislaw.

The following additional qualifications have been registered: Schneider, Otto Henry (M.B., B.S., 1939, Univ. Sydney), F.R.C.S. (England), 1950; Scott-Young, Norman Reginald (M.B., B.S., 1941, Univ. Sydney), F.R.C.S. (England), 1951.

QUEENSLAND.

THE following have been registered, pursuant to the provisions of *The Medical Acts*, 1939-1948, of Queensland, as duly qualified medical practitioners: Stephens, Willem Lodewyk Bosschart, M.B., B.S., 1929 (Univ. Melbourne); Dowds, John Alexander, M.B., B.Ch., 1930 (Univ. Dublin); Roche, Mark Francis, M.B., B.S., 1949 (Univ. Melbourne); Rathouse, Emanuel Moses, M.B., Ch.B., 1939 (Univ. Cape Town); Jones, Gwyn Francis, M.R.C.S. (England), 1933, L.R.C.P. (London), 1933, M.B., B.S., 1934 (Univ. London); Knight, Victor Ernest, M.B., B.S., 1938 (Univ. Melbourne); Gottlieb, Samson, M.D., 1939 (Paris), registered in the Register of the General Council of Medical Education and Registration of the United Kingdom under Sections 1 and 2 of the *Medical Practitioners and Pharmacists Act* of 1947 (English).

Obituary.

HUGH CAIRNS.

WE regret to announce the death of Sir Hugh Cairns, which occurred on July 18, 1952, at Oxford, England.

ROY FALLOWES WATSON.

WE regret to announce the death of Dr. Roy Fallowes Watson, which occurred on July 14, 1952, at 294 Glenferrie Road, Hawthorn, Victoria.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED JULY 5, 1952.[1]

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	..	..	..	..	..	..	..	..	..
Amœbiasis	..	..	..	..	1(1)	..	..	..	1
Ancylostomiasis	..	..	..	..	..	..	..	..	..
Anthrax	..	..	..	..	..	..	..	..	..
Bilharziasis	..	..	..	..	..	..	..	..	..
Brucellosis	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus)	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..
Diarrhœa (Infantile)	..	..	6(5)	..	..	..	1	..	7
Diphtheria	9(3)	12(5)	11(9)	..	2(2)	..	..	..	34
Dysentery (Bacillary)	..	..	11(11)	1(1)	3(2)	..	..	1	16
Encephalitis	..	1	..	..	..	..	..	..	1
Filariasis	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice	..	..	..	..	..	..	..	..	..
Hydatid	..	..	..	..	..	..	..	..	..
Infective Hepatitis	..	1	..	..	8(5)	..	..	..	9
Lead Poisoning	..	..	..	..	..	..	..	..	..
Leprosy	..	..	..	..	..	..	..	..	..
Leptospirosis	..	..	3(1)	..	..	..	..	..	3
Malaria	..	..	..	..	2(2)	..	..	..	2
Meningococcal Infection	2(1)	3(1)	..	1(1)	2(2)	2(1)	..	..	10
Ophthalmia	..	..	..	..	..	..	..	..	..
Ornithosis	..	..	..	..	..	..	..	..	..
Paratyphoid	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..
Poliomyelitis	1	1(1)	1	14(10)	..	..	..	..	17
Puerperal Fever	..	..	..	..	1	..	..	..	1
Rubella	..	7(4)	..	..	2(2)	..	1	1	11
Salmonella Infection	..	2	..	..	..	..	..	..	2
Scarlet Fever	19(7)	23(20)	34(30)	7(3)	2(2)	1(1)	..	1	87
Smallpox	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	..	..	1	..	1
Trachoma	..	..	..	..	..	..	..	..	..
Trichinosis	..	..	..	..	..	..	..	..	..
Tuberculosis	75(59)	7(3)	33(28)	6(4)	4(3)	1	1	..	127
Typhoid Fever	..	..	..	..	..	..	..	..	..
Typhus (Flea-, Mite- and Tick-borne)	..	..	1	..	1(1)	..	..	..	2
Typhus (Louse-borne)	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..

[1] Figures in parentheses are those for the metropolitan area.

Notice.

THE SIR RICHARD STAWELL ORATION.

THE Sir Richard Stawell Oration will be delivered at the Royal Australasian College of Surgeons, Spring Street, Melbourne, on October 1, 1952, at 8.15 p.m., by Professor S. M. Wadham, of the School of Agriculture, University of Melbourne. The title will be "The World Food Problem: Technical or Social?".

Medical Appointments.

Dr. D. W. L. Parker has been appointed president, and Dr. T. G. H. Hogg has been appointed a member of the Physiotherapists' Registration Board of Tasmania, as representatives of the Tasmanian Branch of the British Medical Association.

Dr. J. K. Adey has been appointed chief medical officer of the Mental Hygiene Authority of Victoria.

Dr. B. Quick has been appointed a member of the Cancer Institute Board of Victoria, as the nominee of the Alfred Hospital.

Dr. V. L. Matchett has been appointed senior medical officer in the Mental Hygiene Branch, Department of Public Health, Victoria.

Dr. P. R. Patrick has been appointed a member of the Queensland Health Education Council.

Dr. S. H. Swift has been appointed senior medical officer of State hospitals and homes in the Department of Public Health of New South Wales.

Dr. Margaret Mary Jones has been appointed to the School Medical Service in the Department of Public Health of New South Wales.

Dr. P. T. L. Hitchings, Dr. N. McConaghy and Dr. C. T. Poustie have been appointed medical officers, pursuant to the provisions of Section 18 (2) of the *Mental Hygiene Authority Act*, 1950, of Victoria.

Dr. G. S. S. Hayes has been appointed Government Medical Officer, Brisbane.

Dr. H. Crawford has been appointed deputy chairman of the National Fitness Council of Queensland.

Dr. D. A. Dowling and Dr. P. R. Patrick have been appointed members of the National Fitness Council of Queensland.

Dr. J. G. Cameron has been appointed an official visitor to the Mental Hospitals, Mont Park, Janefield, and Larundel, Victoria.

Dr. G. T. James has been appointed an official visitor to the Mental Hospital and Receiving House, Ballarat, Victoria.

Dr. G. S. S. Hayes has been appointed visiting surgeon to Her Majesty's Prison, Brisbane.

Dr. K. L. Hayes has been appointed public vaccinator to the Borough of Stawell, Victoria.

Dr. J. M. Andrew has been appointed public vaccinator to the town of Yallourn, Victoria.

Dr. D. G. Alsop has been appointed public vaccinator to the Shire of Bairnsdale, Victoria.

Dr. T. A. McLean has been appointed public vaccinator to the Shire of Traralgon, Victoria.

Dr. D. F. Lally has been appointed public vaccinator to the Shire of Rodney, Victoria.

Dr. K. J. Meagher, Dr. S. J. Wright and Dr. Heather Byers Gibson have been appointed medical examiners of the State Psychological Clinic of the Public Health Department, Hobart.

Dr. J. F. J. Cade has been appointed medical superintendent (senior) in the Department of Health, Victoria, pursuant to the provisions of Section 18 (2) of the *Mental Hygiene Authority Act*, 1950.

Dr. A. R. Anderson has been appointed medical officer for tuberculosis services at the Royal Adelaide Hospital.

Dr. R. B. Pitcher has been appointed medical officer to the local Board of Health, Burra Burra, South Australia.

Dr. T. Giblin has been appointed a representative of the registered medical practitioners on the Board of the Hobart Public Hospitals District.

Dr. J. L. Grove has been appointed chairman of the Board of the Launceston Public Hospitals District.

Dr. G. M. W. Clemons has been appointed a representative of the registered medical practitioners on the Board of the Launceston Public Hospitals District.

Nominations and Elections.

THE undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Joseph, Anthony, registered in accordance with the *Medical Practitioners Act*, 1938-1950, Section 17 (1) (*c*), Gosford District Hospital, Gosford, New South Wales.

Diary for the Month.

AUGUST 5.—New South Wales Branch, B.M.A.: Organization and Science Committee.
AUGUST 6.—Western Australian Branch, B.M.A.: Council Meeting.
AUGUST 8.—Queensland Branch, B.M.A.: Council Meeting.
AUGUST 12.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
AUGUST 18.—Victorian Branch, B.M.A.: Finance Subcommittee.
AUGUST 19.—New South Wales Branch, B.M.A.: Medical Politics Committee.
AUGUST 20.—Western Australian Branch, B.M.A.: General Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federal Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178 North Terrace, Adelaide): All Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital: all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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